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HIGH SCHOOL AND UNIVERSITY
MATRICULATION EXAMINATIONS BOARD.
DEPARTMENTAL EXAMINATIONS, 1926

GERMAN 3.

Time—Three hours.

Values.

1. Translate into German:

- | | | |
|---|-----|---|
| 3 | (a) | My younger brother often has violent headaches;
I think he eats too much. |
| 3 | (b) | They are hungry, but a bright fire is burning and
a good supper is waiting for them. |
| 2 | (c) | I was at the concert too, and am sorry not to have
met you. |
| 2 | (d) | We have bought this dear wine for the patients
in the hospital. |
| 3 | (e) | When your cousin was here last year he had a
cold, and could not speak. |
| 2 | (f) | After the lady had sung, a celebrated actor recited
a most beautiful poem. |
| 2 | (g) | Since our friends have been in this country, they
have become very rich. |
| 2 | (h) | The train for Berlin will leave at nine ten in the
morning and will arrive at our city at two
forty-eight in the afternoon. |
| 3 | (i) | Opposite the railway station stands a restaurant
where we both had a cup of coffee. |
| 3 | (j) | If the steamers had not been so full we should
have started for Germany already. |

2. Translate into German:

A rich man had been ill for several weeks and was surprised that two or three of his friends did not come to see him. "They do not venture to appear before you," said his accountant*. "The sum of money which they owe you is overdue† and they are not able to pay it off." "Then go," said the invalid, "and tell them that they owe‡ me nothing and that I only ask them to come and fetch their receipts. For I would rather lose my money than my friends."

* Buchhalter (m); † überfällig; ‡ schulden.

Values.

- 18 3. Write a composition in German of not less than 100 words in the form of a letter to a friend telling of what you have been doing lately; how the members of your family are; where you are going this summer; of the new house your father is building; what the weather is like, etc.

- 10 4. *Translate into English:*

Am Schlusse des achtzehnten Jahrhunderts gab es einen Freiherrn Peter von Gemperlein, der, der erste seines kriegerischen Hauses, dem Staate als Beamter diente und noch am Abende seines Lebens ein hübsches Gut in einer der fruchtbarsten Gegenden Oesterreichs erwarb. Dort schloß er hochbetagt, in Frieden mit Gott und mit der Welt, sein Dasein. Er hinterliesz zwei Söhne, die Freiherren Friedrich und Ludwig.

In diesen beiden letzten Sprossen schien die im Vater verleugnete Gemperleinsche Natur sich wieder auf sich selbst besonnen zu haben. Sie brachte noch einmal, und zwar, was sie früher nie gethan, in demselben Menschenalter die beiden Typen des Geschlechtes, den feudalen und radikalen Gemperlein hervor. Friedrich, der ältere, war, seiner Neigung folgend, in der Militärakademie zu Wiener-Neustadt zum Waffenhandwerke ausgebildet worden. Ludwig bezog im achtzehnten Jahre die Universität in Göttingen und kehrte im zweiundzwanzigsten, mit einer prächtigen Schmarre im Gesichte und mit dem Ideale einer Weltrepublik im Herzen, nach Hause zurück.

- 4 (a) Give the principal parts, indicating the auxiliary of tense, of the following verbs: gab; erwarb; hinterliesz; schien.
- 2 (b) Beamter—prefixing the proper form of the article to the word *Beamter*, decline the expression throughout.
- 1 (c) mit einer prächtigen Schmarre im Gesichte. What custom is here indirectly alluded to?
- 2 (d) die Freiherren Friedrich und Ludwig—characterize concisely the two brothers as their personalities are developed in the story.

5. *Translate into English:*

- 2 (a) Die Teilung wurde vielfach und hitzig erörtert; sie jedoch wirklich zu vollziehen, hoho! das überlegt man sich.
- 2 (b) Nichtsdestoweniger war seit langer zeit die Grenze Zwischen Ober=und Unter=Wlastowitz in der Katastralmappe verzeichnet.

Values.

- 1 (c) Gewöhnlich gestaltete nach beiläufig viertelstündiger Dauer.
- 1 (d)er sollte in seinem Schatten nicht mehr ruhen.
- 1 (e)du leidest an fixen Ideen.
- 1 (f) Ludwig machte, wie man zu sagen pflegt, einen Katzenbuckel machen.
- 2 (g) Der Titel Oberlieutenant.....gehört in der nachfolgende Zeile, ist beim Setzen vermutlich nur zufällig hinaufgerutscht.....
- 1 (h)in seinem Kopfe ging es zu wie in einem Pochwerke.

10 6. *Translate at sight into English:*

Kurfürst August der Starke von Sachsen besaß eine ganz ungewöhnliche Körperkraft. Einmal hielt er einen Trompeter auf der flachen Hand zum Fenster hinaus und ließ ihm ein Stücklein blasen. Ein andermal hielt er unterwegs bei einem Schmiede an, um sein Pferd beschlagen zu lassen. Als der Meister das Eisen brachte, sagte der König, es scheine ihm nicht stark genug zu sein. "Ihr werdet es nicht zerbrechen," sagte der Hufschmied, "und Euer Pferd wird es nicht zertreten." Da nahm August das Hufeisen und brach es entzwei. Nachdem ein stärkeres Eisen geschmiedet und aufgelegt worden war, gab er dem Schmiede einen Dukaten. Dieser nahm das Goldstück und brach es mitten durch. Jetzt ergriff der Kurfürst eine eiserne Stange und bog sie dem Schmiede wie einen Draht* um den Hals. Da gestand der Meister, daß jener doch stärker sei als er.

*Wire.



HIGH SCHOOL AND UNIVERSITY
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LITERATURE 4

Time—Three hours.

Values.

- 12 1. The various popular versions of the Lear story that precede Shakespeare confine themselves to the story of Lear and his three daughters, and end with the victory of the French, the flight of Goneril and Regan, and the reinstatement of Lear.

Why does Shakespeare weave the Gloucester story into the plot, in what ways does it contribute to the main action and why does Shakespeare substitute a tragic ending?

- 6 2. "Nature in you stands on the very verge
Of her confine. You should be rul'd and led
By some discretion that discerns your state
Better than you yourself."

What is the precise meaning of these words?
What justification has the speaker for using them?

- 10 3. Give the speaker of each of the following passages, and explain the exact meaning of the italicized parts:

(a) "And pat he comes *like the catastrophe of the old comedy*; my cue is villanous melancholy, with a sigh like Tom O'Bedlam."

(b) "This is some fellow
Who, having been praised for bluntness, doth affect
A saucy roughness, and *constrains the garb*
Quite from his nature."

(c) "This act persuades me
That *this remotion of the duke and her*
Is practice only."

(d) "That nature which contemns its origin
Cannot be border'd certain in itself
She that herself will sliver and disbranch
From her material sap, perforce must wither
And come to deadly use."

Values.

- (e) "I protest,
Maugre thy strength, youth, place and eminence,
Despite thy victor sword and fire-new fortune,
Thy valour and thy heart, thou art a traitor."

12 4. What is an epic? What great epic has Greek Literature given us? Latin? Name one notable epic falling between the classical epics and *Paradise Lost*. In what general respects does *Paradise Lost* conform to the type? In what important respect does it differ from the type? What does Milton declare to be the *subject*, and what the *purpose*, of *Paradise Lost*? By what touches is Satan made to appear a heroic figure in the first book of *Paradise Lost*?

10 5. (a) From the various descriptive touches scattered through the "Guardian Angel" reconstruct and describe the painting which occasions the poem.

(b) Put into your own words the thoughts and emotions which the painting inspires in the poet. In this connection, enlarge upon the following point: that when once the initial thought has entered the poet's mind, the emotions arise from a sense of contrast.

(c) One measure of the greatness of a lyric is that the feelings and emotions which it records are shared by the reader; that, entering into the circumstances, he finds the emotions true for him. What truth of universal application to human experience do you find in this poem?

OR

10 6. (a) Give in your own words the picture which Byron draws of a bull fight. What hints are there in the poem of Byron's own opinion of such a spectacle?

(b) Describe, and explain the history of, the metrical form, the stanzaic structure, of the poem.

(c) Why does Byron introduce such words as "oped," "ne," "featly," "conynge," and "lated wight"? What are such words called? How do such words strike you when found in company with such lines as "Skill'd in the ogle of a roguish eye"?

10 7. How does Ruskin define the "good books of the hour" and the "books of all time"?

Summarize what he says about the way to get at an author's meaning.

Values.

- 8 **8.** "The great and pure society of the Dead.....
allows no vain or vulgar person to enter."
Explain fully what Ruskin means by a "vain and vulgar person," and why such a person cannot enter the "great and pure society of the Dead".
- 12 **9.** "An eminently well-conditioned man, healthy in body, healthy in soul," Carlyle says of Scott.
Summarize fully what Carlyle says on this point and, in addition, note such facts of Scott's life as tend to prove Carlyle's statement.

SUPPLEMENTARY LITERATURE.

- 7 **10.** Tell the story of the play-giving artisans, indicating at what point it comes in contact with the story of the two pairs of lovers and with the story of Theseus and Hippolyta.
- 7 **11.** What impressions have you formed from *The Last of the Barons* of the character of King Edward IV? Describe from the story a scene in which the contrast between King Edward and the Earl of Warwick is especially illustrated.
- 6 **12.** Describe the scene of Peter's return in such a way as to characterize each of those concerned in the scene, and to make clear the spirit of the episode.



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LATIN 3.

Time—Three hours.

Values.

- 8 **1.** Translate into English:

Aegrotabat Caecina Paetus, maritus eius; aegrotabat et filius, uterque mortifere, ut videbatur. Filius decessit, eximia pulchritudine, pari verecundia, et parentibus non minus ob alia carus quam quod filius erat.

Huic illa ita funus paravit, ita duxit exsequias, ut ignoraret maritus. Quin immo, quoties cubiculum eius intraret, vivere filium atque etiam commodiorem esse simulabat, ac persaepe interroganti quid ageret puer, respondebat, "Bene quievit, libenter cibum sumpsit."

Deinde, cum diu cohibitae lacrimae vincerent prumperentque, egrediebatur. Tunc se dolori dabat. Satiata, siccis oculis, composito vultu redibat, tamquam orbitatem foris reliquisset.

- 2 (a) What is the remaining incident narrated of Arria by Pliny? How does he distinguish it from this?

- 8 **2.** Translate into English:

Iam dies alibi, illic nox omnibus noctibus nigrior densiorque. Placuit egredi in litus et ex proximo aspicere ecquid iam mare admitteret, quod adhuc vastum et adversum permanebat. Ibi super abiectum lintem recubans, semel atque iterum frigidam aquam poposcit hausitque. Deinde flammae flammarumque praenuntius odor sulphuris alios in fugam vertunt, excitant illum. Innitens servolis duobus adsurrexit et statim concidit, ut ego colligo, crassiore caligine spiritu obstructo, clausoque stomacho, qui illi natura invalidus et angustus erat. Ubi dies redditus, corpus inventum est integrum, illaesum opertumque ut fuerat indutus; habitus corporis quiescenti quam defuncto similior.

- 1 (a) What led Pliny to write this extended account of his uncle's death?

- 1 (b) What description does Pliny give of the smoke-cloud rising from Vesuvius in this eruption?
- 8 **3.** Translate into English:
 SO. Quid ais? SI. Redeo inde iratus atque aegre ferens.
 nec satis ad obiurgandum causae. diceret:
 "quid feci? quid commerui aut peccavi, pater?
 quae sese in ignem inicere voluit, prohibui:
 servavi," honesta oratio est. SO. Recte putas:
 nam si illum obiurges, vitae qui auxilium tulit,
 quid facias illi qui dederit damnum aut malum?
 SI. Venit Chremes postridie ad me clamitans
 indignum facinus comperisse; Pamphilum
 pro uxore habere hanc peregrinam. ego illud sedulo
 negare factum. ille instat factum. denique
 ita tum discedo ab illo ut qui se filiam
 neget daturum. SO. Non tu ibi gnatum....SI. Ne
 haec quidem satis vemens causa ad obiurgandum. SO.
 Qui, cedo?
- 1 (a) *Redeo inde.* What is the scene from which he has just returned.
- 1 (b) *Ut qui se filiam neget daturum.* Explain how in the end he gave his daughter after all, but not just in the way expected.
- 8 **4.** Translate into English:
Enter Pamphilus
 PA. Ubi illic est scelus qui me hodie.....DA.
 (*Aside*) Perii.
 PA. Atque hoc confiteor iure
 mi obtigisse; quandoquidem tam iners, tam nulli
 consili sum.
 servon fortunas meas me commisisse futili!
 Ego pretium ob stultitiam fero; sed inultum id numquam auferet.
 DA. (*Aside*) Posthac incolumem sat scio fore me si devito hoc malum.
 PA. Nam quid ego nunc dicam patri? negabon velle me, modo
 qui sum pollicitus ducere? qua audacia id facere audeam?
 nec quid me nunc faciam scio. DA. (*Aside*) Nec me quidem, atque id ago sedulo.
- 2 (a) Write a note on the character of the slave in the New Comedy as exemplified in the *Andria*.

Values.

- 10 **5.** Translate into English at sight:

Pliny laments the death of the poet Martial.

Audio Valerium Martialem decessisse et moleste fero. Erat homo ingeniosus, acutus, acer, et qui plurimum in scribendo et fellis haberet nec candoris minus. Prosecutus eram viatico secedentem Roma; dederam hoc propter versiculos quos de me composuit. Fuit enim moris antiqui eos qui vel singulorum laudes vel urbium scripserant, aut honoribus aut pecunia ornare; nostris vero temporibus, ut alia speciosa et egregia, ita hoc in primis exolevit. Nam postquam desiimus facere laudanda, laudari quoque ineptum putamus.

Fel—satire.

Candor—fairness.

Viaticum—passage money.

Exolesco—to go out of fashion.

Desino—to cease.

—
50
—

GRAMMAR AND PROSE COMPOSITION SECTION.

- 2 **1.** (a) Decline together throughout the singular:
periculum imminens.
- 3 (b) Decline together throughout the plural:
illae noctes nigriores.
- 5 **2.** For each of the following nouns give the *ablative singular*, the *genitive plural*, and the *gender*:
spiritus, hiems, tempus, navis, mare.
- 5 **3.** Give the principal parts of the verbs from which are derived the following forms:
Patitur, effundit, poposcit, conquiras, infigenda.
- 5 **4.** Explain the following forms from the *Annia*:
hocine, intellexti, gnatam, servibam, siem.
- 5 **5.** Explain briefly the syntax of the italicized words and phrases in the following:
- 1 (a) His nulla mors non repentina est, *ut quae semper inchoatum aliquid abrumpat.*

Values.

- 1 (b) Neque enim dubito *futurum ut non deponas* si
semel sumpseris.
- 1 (c) *Quibus* reliquam umbram et residuum libertatis
nomen eripere durum, ferum, barbarum est.
- 1 (d) Iubet Liburnicam aptari; mihi si venire una
mallem, facit copiam.
- 1 (e) Certus erat *fugae* si contrarius ventus resedisset

6. Translate into Latin:

- 6 (a) We cannot recall the dangers which we have es-
caped without feeling grateful to those who laid
aside the fear of death for our sake.
- 6 (b) The leaders of the conspiracy left behind in
Rome were the only ones who could carry out
Catiline's plans; therefore, with these removed
(*suffero*), there is nothing any longer (*am-
plius*) to be feared.
- 6 (c) If we had realized in advance how great a con-
spiracy was being formed, we might have avert-
ed the peril, but as it is (*nunc*), I fear that we
cannot save the state from being destroyed.
- 7 (d) Since we must now choose a general for the war
in Asia (*Asiaticus*) without delay, let us choose
a man worthy by reason of his worth and
knowledge to have such a command entrusted
(*committo*) to him.



HIGH SCHOOL AND UNIVERSITY
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DEPARTMENTAL EXAMINATIONS, 1926

CHEMISTRY 2.

Time—Three hours.

Values.

- | | | |
|---|---------------|--|
| 1 | 1. (a) | State the commercial source from which helium is obtained. |
| 1 | (b) | What property of helium makes it possible to separate it from the other gases with which it occurs? |
| 4 | (c) | State <i>two</i> commercial uses of helium and give the property of the gas which makes it valuable in each case. |
| 3 | 2. (a) | Describe the preparation of metallic calcium. |
| 1 | (b) | What two chemical compounds make up air-slaked lime? |
| 2 | (c) | Write an equation to show the liberation of chlorine from bleaching powder. |
| | (d) | Write equations to express the reactions which take place in the following: |
| 2 | (1) | The making of calcium carbide. |
| 2 | (2) | The manufacture of calcium cyanamide. |
| 2 | (3) | The use of limestone in making sodium carbonate. |
| 4 | 3. (a) | Write the equations which express the chemical changes which take place in the metallurgy of (1) tin, (2) lead. |
| 6 | (b) | Write the equations expressing the chemical changes which take place in the making of the following compounds: stannic chloride, lead acetate and lead chromate. |
| 1 | 4. (a) | Name the elements which belong to the nitrogen family according to the periodic law. |
| 6 | (b) | Give <i>three</i> reasons for placing the elements referred to in (a) in the same family. |

Values.

- 2 **5.** (a) Write the equation which expresses the chemical changes which take place in obtaining phosphorus from its ore.
- 2 (b) Describe the preparation of super-phosphate fertilizer.
- 2 (c) Write the equation representing the chemical change which takes place in (b).
- 2 **6.** (a) State the source and name the mineral from which a large part of the world's supply of nickel is obtained.
- 4 (b) For what reasons, respectively, is nickel used in the following cases: coinage, domestic utensils, nickel steel, invar?
- 2 (c) Write the equation showing the reaction which takes place in the formation of ferric chloride.
- 3 (d) How would you, by experiment, distinguish between ferrous and ferric chlorides?
- 1 **7.** (a) State Avogadro's hypothesis.
- 2 (b) What facts pertaining to all gases are explained by this hypothesis?
- 3 (c) Accepting Avogadro's hypothesis, show that the molecule of chlorine consists of at least two atoms.
- 6 (d) The molecular weight of dextrose is 180. What change would be made in the boiling point by adding 450 grams of dextrose to 500 c.c. of water?
- 8.** Write equations for the chemical reactions involved in the following experiments:
- 2 (a) Potassium permanganate is acted on by hydrochloric acid.
- 2 (b) Sodium peroxide is mixed with hydrochloric acid.
- 4 (c) Chlorine is passed into a water solution of sodium sulphite and barium chloride added to the resulting substance.
- 2 (d) Tin is acted on by strong nitric acid.
- 2 (e) Sulphuric acid is added to aluminium hydroxide
- 4 **9.** (a) Briefly describe the industrial preparation of ethyl alcohol, explaining the chemical changes that occur.
- 2 (b) Write the equation representing the reaction when methyl alcohol vapor and air are passed over heated copper wire.

Values.

- 4 (c) Describe the preparation of nitro-glycerin and write the equation for the chemical reaction involved.
- 3 (d) What substance is formed when ethyl alcohol is heated with sulphuric acid and of what use is it?
- 2 (e) Write the equation for the chemical action which takes place in (d).
- 6 **10.** (a) You are provided with a dilute solution of lead nitrate and all necessary reagents. Fully describe the methods used to detect the base and the acid in the solution.
- 3 (b) Write a note on the use of hydrogen sulphide as an agent for grouping metals in qualitative analysis.



HIGH SCHOOL AND UNIVERSITY
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LATIN 2.

Time—Three hours.

SECTION A (Authors and Sight Translation)

Values.

- 8 **1.** Translate into English:

Ut enim populi Romani honores quondam fuerunt rari et tenues ob eamque causam gloriosi, nunc autem effusi atque obsoleti, sic olim apud Athenienses fuisse reperimus. Namque huic Miltiadi qui Athenas totamque Graeciam liberarat, talis honos tributus est in porticu quae Poecile vocatur, cum pugna depingeretur Marathonica, ut in decem praetorum numero prima eius imago poneretur isque hortaretur milites proeliumque committeret. Idem ille populus, posteaquam maius imperium est nactus et largitione magistratuum corruptus est, trecentas statuas Demetrio Phalereo decrevit.

- 1 (a) What view about the Persian invasion had Miltiades urged upon his colleagues from the first?
- 1 (b) What point is Nepos seeking to prove by this comparison of Greece and Rome?

- 8 **2.** Translate into English:

Fuisse patientem suorumque iniurias ferentem civium, quod se patriae irasci nefas esse duceret, haec sunt testimonia. Cum eum propter invidiam cives sui praeficere exercitui noluissent duxque esset delectus belli imperitus, cuius errore eo esset deducta illa multitudo militum ut omnes de salute pertimescerent quod locorum angustiis clausi ab hostibus obsidebantur, desiderari coepta est Epaminondae diligentia; erat enim ibi privatus numero militis. A quo cum peterent opem, nullam adhibuit memoriam contumeliae, et exercitum obsidione liberatum domum reduxit incolumem.

- 2 (a) Tell the story of the reply made by Epaminondas when Pelopidas reproached him for having no children.

8 **3.** Translate into English:

Dum bibit illa datum, duri puer oris et audax
constitit ante deam risitque avidamque vocavit.
Offensa est, neque adhuc epota parte loquentem
cum liquido mixta perfudit diva polenta.
Combibit os maculas et, quae modo bracchia gessit,
crura gerit; cauda est mutatis addita membris;
inque brevem formam, ne sit vis magna nocendi,
contrahitur, parvaeque minor mensura lacerta est.

1 (a) *Bibit illa.* To what goddess is reference here made?

1 (b) What is the meaning of the name *Metamorphoses*, and how does it apply to the selections of Ovid you have read?

4 **4.** Translate into English:

Daedalus interea, Creten longumque perosus
exilium tactusque loci natalis amore,
clausus erat pelago. "Terras licet" inquit "et undas
obstruat, at caelum certe patet; ibimus illac;
omnia possideat, non possidet aera Minos."

1 (a) What was the native city of Daedalus? Why had he been taken to Crete?

4 **5.** Translate into English:

Iam vada Cephissi Panopesque evaserat arva;
bos stetit et tollens speciosam cornibus altis
ad caelum frontem, mugitibus impulit auras,
atque ita respiciens comites sua terga sequentes,
procubuit teneraque latus submitit in herba.

1 (a) What was the significance of these actions according to the oracle?

10 **6.** Translate into English at sight:

The Fascination exercised by Alcibiades
on the Athenians.

Cum imperatoribus obviam universa civitas in Piraeum descendisset, tanta fuit omnium exspectatio visendi Alcibiadis ut ad eius triremem volgus conflueret proinde ac si solus advenisset. Sic enim populo erat persuasum et adversas superiores et praesentes secundas res accidisse eius opera. Itaque et Siciliam amissam et Lacedaemoniorum victorias culpa suae tribuebant, quod talem virum e civitate expulissent, neque id sine causa arbitrari videbantur.

Obviam—to meet.
 Piraeus is the harbor of Athens.
 Triremis—cruiser.
 Proinde ac si—just as if.
 Res adversae—misfortune.
 Res secundae—success.
 Opera—agency.

SECTION B (*Grammar and Prose Composition*)

1. Decline in combination throughout both numbers:

- 3 (a) *ille filius infamis*;
 2 (b) *idem exercitus*.

3 2. Write the *genitive singular* of *aetas* and *iter*, the *ablative singular* of *homo* and *cornu*, the *nominative plural* of *agmen* and *mare*.

5 3. Give the dative singular of *se*:
 the genitive singular of *is*;
 the accusative singular neuter of *quisquam*;
 the neuter plural nominative of *iste*;
 the masculine genitive plural of *quidam*.

3 4. (a) Give the comparison of *acer*, *sapiens*, *parvus*.
 3 (b) Write the adverbs of the above adjectives in all the degrees of comparison.

4 5. Give the principal parts of the verbs from which the following forms are derived:

adiunxero, *volebat*, *viderunt*, *clausit*.

6 6. Write the following verb forms:
 (a) of *audio* the perfect infinitive active;
 (b) of *possum* the 2d plural present indicative;
 (c) of *rego* the 3d singular future indicative passive;
 (d) of *volo* the 1st plural present indicative;
 (e) of *cipio* the 1st singular imperfect indicative passive;
 (f) of *sto* the 3d plural perfect indicative active.

Values.

7. Translate into Latin:

- 5 (a) to remember; on the next night; to pitch camp;
 at dawn; at sunset; late in the day; to march;
 to inform; at the foot of the mountain; a little
 before.
- 4 (b) Caesar replied that he would command his sol-
 diers to withdraw (*discedo*, 3) immediately.
- 4 (c) If the tenth legion had marched faster, the town
 would not have been captured by the Gauls.
- 4 (d) Why did he ask you where we were living
 (*habito*, 1) in the city?
- 4 (e) This opportunity of establishing peace must not
 be lost (*omitto*, 3).



HIGH SCHOOL AND UNIVERSITY
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FRENCH 2.

Time—Three hours.

Values.

- 4 **1.** When is *être* used as auxiliary of tense in French?
Illustrate your answer with sentences.

- 10 **2.** *Translate into French:*

- (a) She has gone to bed.
- (b) What time is it?
- (c) It is ten minutes to twelve (noon).
- (d) The first of June.
- (e) My aunt has cut her finger
- (f) We ought not to go.
- (g) Give me some.
- (h) He gave it to her.
- (i) George the Fifth.
- (j) What have you need of?

- 3.** *Translate into French:*

- 2 (a) What are you going to do in the country?
I am going to visit my uncle and cousins.
- 2 (b) There are apple trees in the garden. Apples ripen
in the month of September.
- 3 (c) Here are the paintings which my sister has
bought. They are very beautiful.
- 3 (d) Potatoes are more useful than cabbages. They
are good for men and animals.
- 3 (e) Last year I sold roses for twenty francs a dozen.
How much are they now?
- 3 (f) These candies are for your little sister; please give
them to her.

Values.

- 3 (g) We shook hands with your father and mother
They are both very well.
- 3 (h) How long has she been here? She has been here
for half an hour.
- 3 (i) Was it I that those gentlemen bowed to? Yes,
it was to you they bowed.
- 3 (j) I like to spend the evening at home; it is easy to
find amusement there.
- 3 (k) Although he is late, I shall remain in order that
I may see him.
- 3 (l) I should go to visit my aunt again this summer,
if I had not been there so often already.

12 4. *Translate into French:*

I have a young friend who lives in Quebec. I had a letter from him this morning in which he invites me to go with his father, brother and himself on a trip in a motor car to Nova Scotia (Nouvelle Ecosse, f). Pierre—that is my friend's name—says that they will visit Annapolis Royal and Grand Pré. It will be delightful to see that beautiful country of the Acadians (Acadiens).

8 5. *Translate into English:*

Gaston. Eh bien, monsieur Poirier... puisque vous aimez les tableaux touchants, je vous en ferai faire un d'après un sujet que j'ai pris moi-même sur nature. Il y avait sur une table un petit oignon coupé en quatre, un pauvre petit oignon blanc! le couteau était à côté... Ce n'était rien et ça tirait les larmes des yeux.

Verdelet, (bas à Poirier). Il se moque de toi.

Poirier, (bas à Verdelet). Laisse-le faire.

Le Duc. De qui est ce paysage?

Gaston. D'un pauvre diable plein de talent, qui n'a pas le sou.

Poirier. Et combien avez-vous payé ça?

Gaston. Cinquante louis.

Poirier. Cinquante louis! le tableau d'un inconnu qui meurt de faim! A l'heure du dîner, vous l'auriez eu pour vingt-cinq francs.

Antoinette. Oh! mon père!

Poirier. Voilà une générosité bien placée!

Gaston. Comment, monsieur Poirier, trouveriez-vous mauvais qu'on protège les arts?



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GEOGRAPHY—THIRD YEAR.

Time—Three hours.

Values.

- 3 **1.** (a) Define the terms: cyclone, anticyclone, isobar.
 (b) Describe briefly the operation of the instruments
 used at the meteorological stations to determine
3 (1) relative humidity;
3 (2) rainfall;
3 (3) velocity of the wind.
- 2.** (a) The earth may be divided into climatic zones
 based upon the wind belts on the globe.
5 (1) Name and give the approximate location of
 each of these zones.
5 (2) What are the chief characteristics of the
 climate of the zone in which Southern
 India lies?
5 (b) Man's movements are limited to a considerable
 extent by *climatic* barriers. Name and give
 examples of *five* of these barriers.
- 5 **3.** (a) State *five* important factors that are responsible
 for determining the position of industrial and
 commercial centres. Illustrate your answer by
5 reference to *five* cities in the British Empire
 which owe their development to one or more of
 the factors which you have named.
3 (b) Locate the *three* important ocean fishing grounds
 of the world.
3 Name the varieties chiefly produced in each
 region.

[OVER]

Values.

- 3 **4.** (a) (1) Name three factors responsible for Canada becoming a leading wheat exporting country of the world.
- 3 (2) Show the significance of each factor you name.
- 2 (3) Why is the average yield per acre in the great wheat exporting countries much less than in south-eastern England?
- 2 (b) Where is the bulk of the world's supply of crude rubber produced at the present time?
- 4 What advantages have the rubber plantations of these regions over the areas which yield "wild" rubber?

Either

- 4 **5.** (a) State the climatic requirements and chief producing areas for any *two* of the following agricultural products: cotton, tea, cocoa, sugar cane.
- 4

Or

- 4 (a) Name *two* chief centres for any *two* of the following manufacturing industries: iron and steel, cotton, glass, steel ships.
- 4 What chief factors contribute to the location of each of the centres named?
- 2 (b) In what regions in Canada is the manufacture of pulp and paper an important industry?
- 3 Account for the rapid development of this industry in these regions.

6. Discuss the North Atlantic Trade Route under the following headings:

- 2 (a) Reason for the route being a "trunk" route.
- 3 (b) Obstacles to navigation.
- 4 (c) Sources of fuel.
- 5 (d) Nature of traffic.

- 4 **7.** (a) What reasons have you for believing that the "Cape to Cairo Railway" may never be as great a commercial highway as either of the trans-continental railways of Canada?
- 4 (b) Name the natural advantages of Europe for commerce. Why are the railways of continental Europe of relatively less commercial importance than are those of North America?
- 2
- 6 (c) Compare the nature of the cargoes of the vessels which use the Suez and Sault Ste. Marie canals.



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AGRICULTURE 2.

Time—Three hours.

Values.

- 3 **1.** (a) Name *three* characteristics of a heavy clay loam.
5 (b) Outline a satisfactory method of handling such
 a soil for grain production.
2 (c) Why is such a soil suitable for grain-growing?
- 3 **2.** (a) Describe the preparation of the soil for growing
3 corn. Outline the cultivation of the growing
 crop.
3 (b) Using diagrams, describe the construction of the
 trench silo.
2 (c) How is the corn prepared for the silo?
2 What points must be observed in filling the silo
 to get good silage?
2 (d) Account for the palatability and digestibility of
 good silage.

Either

- 5 **3.** { (a) Outline the farm practice in growing sugar beets
 for sugar-production in Alberta.
2 { (b) Name *two* difficulties facing the grower of sugar
 beets in Alberta.
4 { (c) Name *two* by-products in beet sugar manufacture,
 of importance to the farming community.
 What use is made of these?

Or

- 5 **4.** { (a) Outline the farm practice in developing a field of
 timothy to produce hay.
4 { (b) Describe the harvesting of timothy under the
 headings: (1) time for cutting, (2) curing.
2 { (c) Give *two* reasons for the popularity of timothy as
 horse feed.

[OVER.]

Values.

- 4 **5.** (a) Describe a method of soil treatment to promote
 the growth of beneficial bacteria.
- 3 (b) Account for soil drifting
- 2 (c) How might this trouble (soil drifting) be cured?
- 6.** (a) Describe Ball Mustard *or* Russian Thistle under
 the headings:
- 1 (1) Duration.
- 2 (2) Appearance.
- 2 (3) Distinguishing characteristics.
- 2 (4) Harmfulness.
- 2 (5) Eradication.
- 3 (b) Show *six* ways in which weeds cause economic
 loss.
- 3 **7.** (a) Under what conditions should irrigation be
 practised? ..
- 3 (b) Account for the formation of alkali areas under
 irrigation.
- 2 (c) How might this formation of alkali be prevented?
- 2 **8.** (a) What is meant by the "pool" method of mar-
 keting?
- 3 (b) Give the characteristics of a breed of poultry suit-
 able for egg production.
- 5 (c) Outline the management of poultry from hatch-
 ing to egg-laying.
- 4 **9.** (a) Describe a method for providing a sanitary and
 convenient supply of water for a farm house.
- 4 (b) Make a diagram of a proper stable for horses on
 the farm.
- 4 **10.** (a) What is the difference in construction and action
 of a sod-breaking plow and a stubble plow?
- 4 (b) Make a diagram of a border of perennials suitable
 for a rural home, marking on the plan the loca-
 tion of the plants selected.

Either

- 4 **11.** { (a) Describe *one* of the bacon breeds of hogs.
- 4 (b) Outline the care of this hog from weaning to
 marketing.
- 1 (c) Account for the movement to make this type the
 predominant hog in Alberta.

Or

- 4 **12.** { (a) Describe *one* of the dairy breeds of cattle.
- 4 (b) Outline the care of a dairy herd during winter
- 1 (c) Show the importance to the dairy industry of
 having a careful inspection of herds, creameries
 and output.



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ART 2.

Time—Three hours.

NOTE: Answer any three questions, *one* of which *must* be question 5.

Values.

- 35 **1.** Make a pencil outline from memory of a boy's express wagon or an automobile. The drawing must be an example of angular perspective.

OR

Make a pencil sketch of a house that has one section at right angles to the main portion of the house. The house is to be shown at an angle to the observer. Show chimneys, doors, windows and projecting roof. You are to show light and shade and make the drawing sufficiently large to be well placed on the paper.

- 35 **2.** Make a pen and ink sketch of some pleasing piece of scenery rendered as a good example of a decorative pen drawing. Make an effort to secure good tone balance. Size of landscape is not to be less than six square inches.

OR

Make a decorative drawing of some human figure in costume that would be suitable for poster use. Leave out details of the face. Color your sketch with crayons or water-colors. The drawing must be as large as the paper will allow.

[OVER]

Values.

- 35 **3.** Within a rectangle 6" x 8" make a design that will be suitable for a bookplate.

(Bear in mind that it is a business method to reduce this size to 3" x 4".)

Place in the design the words: This book is from the library of..... Add suitable decoration and finish in black and white, using India ink.

- 15 **4. (a)** What are the *three* methods of greying a color? Draw three squares 2" in size and paint these with washes of any color greyed in the three ways you mentioned as answers to first part of question.

- 10 **(b)** Give *three* ways in which we can change the value of any color. Draw three squares as above and color them with three values of the same color as examples.

- 10 **(c)** Give examples of any one group of colors that are double split-complementaries. Paint them in squares of one inch in size.

- 15 **5. (a)** Write a brief, concise story of the development of statuary. Mention which country had the most to do with this development and why. Tell of several early sculptors and of the part they played in the work. Discuss the piece of statuary known as "Moses," mentioning its chief features, who chiselled it, giving a brief account of his life, and telling where the piece of work may be seen.

- 15 **(b)** What is meant by the Pre-Raphaelites, the Academists, and the Neo-Impressionists? In your explanation of these three schools, mention any of their pictures, giving the names of the artists.

Poirier. Qu'on protège les arts, bien! mais les artistes, non....ce sont tous des fainéants et des débauchés. On raconte d'eux des choses qui donnent la chair de poule.

1 (a) *Cinquante louis*....vingt-cinq francs—Why does Gaston use the term *louis* and Poirier prefer *francs*.

1 (b) *A l'heure du dîner*: What has Poirier in mind in saying this?

4 (c) Write out in full the principal parts of:
ferai; pris; avait; meurt.

(d) *Translate into French*:

1 1. I paid six francs for it.

1 2. You have made fun of me.

1 3. Are you hungry?

8 6. *Translate into English*:

Antoinette. Ah! je viens de perdre tout ce que j'avais gagné dans le coeur de Gaston....Il m'appelait marquise, il y a une heure....mon père lui a rappelé brutalement que je suis mademoiselle Poirier.

Verdelet. Eh bien! est-ce qu'on ne peut pas aimer mademoiselle Poirier?

Antoinette. Mon dévouement aurait fini par le toucher peut-être, ma tendresse par attirer la sienne....Il était déjà sur la pente insensible qui le conduisait à moi! mon père lui fait rebrousser chemin! Mais, pourquoi lui écrit-elle?

Verdelet. Pour l'inviter à quelque soirée, tout simplement.

Antoinette. Uné soirée bien pressée, puisqu'elle envoie l'invitation par un domestique. Oh! quand je pense que le secret de ma destinée est enfermé sous ce pli....allons-nous-en....cette lettre m'attire....je suis tentée. (Elle la remet sur la table et reste immobile à la regarder.)

Verdelet. Viens, tu as raison. (Elle ne bouge pas.)

2 (a) Write out in full the present indicative of:
conduisait; allons-nous-en.

3 (b) *Translate into French*:

1. She has not gone away.

2. You are never wrong.

3. We have just come.

Values.

- 2 (c) *cette lettre m'attire*: Explain briefly the importance of *cette lettre*.
- 2 (d) How do Poirier and Gaston typify two social classes in conflict?
- 6 7. *Translate at sight into English*:

Le Sansonnet* Volé

Un vieux chasseur gardait dans sa chambre un sansonnet, qui savait parler quelques paroles. Par exemple, quand son maître appelait: Sansonnet, où es-tu? l'oiseau intelligent répondait toujours: Me voici. Le petit Charles, fils d'un de ses voisins, aimait beaucoup à voir et à entendre ce sansonnet, et rendait souvent visite à son vieil ami, pour jouer avec l'oiseau. Un jour il arriva pendant l'absence du chasseur. Il saisit vite l'oiseau, le mit dans sa poche et allait courir chez lui avec son larcin. Mais dans ce moment le chasseur rentra. Trouvant Charles dans sa chambre, pour amuser son petit voisin il appela, comme d'habitude: Sansonnet, où es-tu? Me voici, cria de toute sa force l'oiseau caché dans la poche du petit garçon. Ainsi l'oiseau découvrit lui-même le voleur.

*Starling.



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HISTORY OF ENGLISH LITERATURE.

Time—Three hours.

Values.

- 10 **1.** (a) Discuss the place in English Literature of each of the following: The Anglo-Saxon Chronicle, The Ecclesiastical History of the English People, Beowulf, and Widsith.
- (b) What are the characteristics of this age in legends? What later English writers have made use of these tales? What use has been made of this material in languages other than English?
- 10 **2.** (a) Why is the age of Pope sometimes called the "Augustan Age"?
- (b) What are the characteristics of this age in regard to the choice and treatment of subject-matter?
- (c) Give the characteristics of Pope's style and point out the weaknesses of the poet which prevent him from taking rank with our greatest authors.
- (d) Name and describe the favourite metre of Pope's time. What are the weaknesses of this metre as it was used by Pope and his contemporaries?
- 10 **3.** Write a note on the verse form known as the "Sonnet." Who introduced it into England? Name in their chronological order *four* distinguished writers who have used it. Give the names of *two* sonnets taken from this year's readings.
- 10 **4.** (a) Trace the growth of the Drama from the play of St. Katherine to Shakespeare.
- (b) What was the "Mask"? Name *two* great writers who effectively used this form of dramatic composition. Name a famous Mask.

[OVER]

Values.

- 10 **5.** Pace divides his *History of Literature* into the following periods: Before 1066; 1066-1400; 1400-1558; 1558-1643; 1643-1660; 1660-1700; 1700-1800; 1800-1900.

Assign *each* of the following to its correct period. The *Faerie Queene*, *Don Juan*, *Pilgrim's Progress*, *The Spectator*, *Paradise Lost*, *Sir Patrick Spens*, *The Canterbury Tales*, *Tom Jones*, *The King James Bible*, *Ivanhoe*.

- 12 **6.** What is meant by the Romantic Movement? Give at least *four* of its chief characteristics. What evidences of the approaching change were there previous to 1798? In what fields other than Literature was the same spirit evident? Name *six* of the outstanding English Romanticists with an important work of each.

- 10 **7.** (a) Who created the Historical Romance?
(b) Who is the author of the first essay in Literary Criticism?
(c) Who is the greatest classical poet of the 18th century?
(d) Who was the father of modern English prose?
(e) Who was the author of the finest wedding hymn in the English language?
(f) Who was the supreme diarist?
(g) Who was the greatest successor to Shakespeare in the Drama?
(h) Whom does Pace call the founder of the modern novel?
(i) Who introduced Blank Verse into English?
(j) Who was the greatest prose writer before the Norman Conquest?

- 10 **8.** From what literary work represented in your readings is each of the following characters taken? Take *ten*. Sir Richard Grenville, Colonel Crawley, Aunt Pullet, Uriah Heep, Elizabeth Bennet, Ho-ti, Friday, Mr. Bickerstaff, Faithful, Una, Sir Kay, Little John, The Prioress, The Green Knight.

- 10 **9.** Give an account of the life and work of *either* Charles Dickens *or* W. M. Thackeray. Account for the continued appeal of the writings of the novelist you have chosen, to fiction readers of the present day.

- 8 **10.** Who is the great biographer of Dr. Johnson? What is the "Club" to which he refers so frequently in his biography? Name the members of this famous organization. Describe the work of any *one* of them.



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HISTORY 4.

Time—Three hours.

NOTE TO CANDIDATES: Candidates will answer *three* questions from Section A, and *three* from Section B—one of which must be Question 5.

SECTION A.

Values.

1. Describe in some detail the character and achievements of the following men of the Renaissance:
 - 4 (a) Petrarch.
 - 3 (b) Raphael.
 - 4 (c) Michaelangelo.
 - 2 (d) Copernicus.
 - 4 (e) Galileo.
- 17 2. Outline the struggle for trade and empire overseas (a) between England and Holland, and (b) between England and France, showing in each case the reasons why England was able to defeat her rival.
- 17 3. "As to the effects of the industrial revolution, we may say that it has proved one of the most powerful factors in the political, social and intellectual development of the world from that time to the present."
—Botsford.
Discuss this statement.
- 17 4. "In time it became evident that Prussia was to render the same service to Germany that Sardinia had performed for Italy."
—Botsford.

Outline the process of the unification of Italy under the leadership of Sardinia and that of Germany by Prussia, comparing their respective methods and results.

[OVER]

SECTION B.

Values.

5. Discuss the following phases of the history of the United States:

- 4 (a) The problem of making the constitution.
- 4 (b) The westward expansion and colonization of the United States.
- 4 (c) The slavery question.
- 5 (d) The new economic life and the trust and labor problems.

OR

- 4 (a) To what extent is it true to say that the English Constitution is unwritten?
 - 6 (b) By reference to the constitutions of Britain and the United States show the advantages appertaining respectively to flexible and rigid constitutions.
 - 7 (c) Show clearly what is meant by the Legality and Impartiality of the English Constitution.
- 16 6. Compare the position and functions of the King under the English Constitution with those of the Prime Minister.
- 16 7. "As regards Parliament, and more particularly the House of Commons, the significance of the Tudor period has been gravely underrated."—Marriott.
Discuss the relations of the Tudor sovereigns with the House of Commons, making clear the significance of the period in Parliamentary history.
- 16 8. "The legislative work of Parliament is threefold."—Marriott.
Indicate the threefold nature of legislative work and describe the methods of Parliamentary Procedure in accordance with which these different kinds of legislative work must be done.



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PHYSICS 2.

Time—Three hours.

Values.

- 5 **1.** (a) By using a diagram describe the construction of a vernier caliper and indicate how to use it in making a fine measurement.
- 5 (b) Define the terms gram, poundal, erg, horsepower, watt.
- 4 **2.** (a) Deduce the formula $S=UT+\frac{1}{2}at^2$.
- 5 (b) Describe a method for determining the acceleration in the velocity of a falling body.
- 5 (c) A stone is dropped into a mine shaft and 9 seconds after, the sound of the stone striking the bottom is heard. How deep is the shaft? (Sound travels 1024 ft. per sec. and $g=32$.)
- 6 **3.** (a) State Newton's *three* laws of motion and give *one* clear illustration of each.
- 5 (b) Describe the construction and operation of *either* a Cream Separator *or* the differential in a motor car. Use a diagram.
- 4 (c) What force parallel to the plane is necessary to keep a mass of 100 lbs. at rest on a smooth inclined plane rising 3 ft. in 5?
- 2 **4.** (a) What is Coefficient of Friction?
- 3 (b) Describe a method of determining the coefficient of friction between two surfaces.
- 3 (c) What is meant by saying that the static coefficient of friction is greater than the kinetic?

[OVER]

Values.

- 5 **5.** (a) A ladder 50 feet long having a mass of 100 lbs. is carried by two men; one lifts at one end and the other lifts at a point 2 feet from the other end. The first carries $\frac{2}{3}$ of the weight that the second bears. Where is the centre of gravity of the ladder?
- 5 (b) A mass of 20 lbs. hanging at the end of a light cord 16 feet long is drawn aside through an angle of 30° and then let go. Find its kinetic energy in foot poundals when it reaches its lowest point.
- 4 **6.** (a) Explain the action of the differential pulley.
- 3 (b) Demonstrate how the ordinary screw is an adaptation of the inclined plane.
- 5 **7.** (a) Apply "Pascal's Principle" to explain "Archimedes' Principle."
- 4 (b) A piece of iron weighing 263.5 grams weighs in water 226.4 grams. It is placed in a vessel of mercury whose specific gravity is 13.6. How deep does the iron sink into the mercury?
- 3 **8.** (a) What is the kinetic theory of gases?
- 4 (b) Oxygen gas is contained in a cylinder having a volume of 6 cu. ft. under a pressure of 15 atmospheres. Some of the gas is used reducing the pressure to 5 atmospheres. At 6 cents per cu. ft. measured at atmospheric pressure what value of gas was used from the cylinder?
- 5 **9.** (a) Prove that the height to which a liquid may be drawn upwards in a capillary tube, wetted by the liquid, is inversely proportional to the radius of the tube.
- 5 (b) Describe an experiment to show clearly that when certain substances are dissolved in water the surface tension of the solution is less than that of pure water.
- 5 **10.** (a) Prove that the velocity of a mobile liquid flowing through an orifice in a vessel is the same as would be acquired by the liquid falling through the distance that the orifice is below the surface of the liquid.
- 5 (b) Explain why it is dangerous for large ships to manoeuvre too closely to one another.



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GEOMETRY 3.

Time—Three hours.

Values.

- 7 **1.** (a) Find the equation of a straight line in terms of the length of the perpendicular upon it from the origin and the angle the perpendicular makes with the axis of x .
- 5 (b) Reduce $Ax+By+C=0$ to the form developed in (a).
- 7 **2.** (a) Find the length of the perpendicular from (h,k) on the line $AX+BY+C=0$.
- 5 (b) Find the distance of the point of intersection of the lines $3x+2y+4=0$ and $2x+5y+8=0$ from the line $5x-12y+6=0$.
- 5 **3.** (a) Find the ratio in which the line joining $(1,2)$ and $(3,-2)$ is cut by the line $4x+5y-6=0$.
- 5 (b) Find the angle between the lines $x-y\sqrt{3}+1=0$ and $x+y\sqrt{3}-2=0$.
- 5 **4.** (a) Find the equation of the circle through the origin which cuts off intercepts of 3 and 4 on the axis.
- 5 (b) Show that the line $4x+3y=35$ is a tangent to the circle $x^2+y^2-2x-4y=20$.
- 6 **5.** (a) Find the equations of the tangents to the circle $x^2+y^2=r^2$ in terms of the slope of the tangent.
- 5 (b) Find the length of either tangent from (x^1y^1) to the circle $(x-a)^2+(y-b)^2=r^2$.

[OVER]

Values.

- 8 **6.** (a) Trace the form of the parabola whose equation is $y^2=4ax$.
- 3 (b) Find the length of the latus rectum of the parabola.
- 4 **7.** Find the equation of a parabola whose focus is (1,2) and directrix $3x+4y+5=0$.
- 8 **8.** (a) Find the equation of the ellipse.
- 5 (b) Find the equation of the tangent to the ellipse in terms of its inclination to the axis of x .
- 5 **9.** Find the eccentricity and the length of the latus rectum of the ellipse $4x^2+9y^2=36$.
- 6 **10.** (a) Find the distances of any point (x,y) on the hyperbola from the foci.
- 6 (b) Find the equation of the normal to the hyperbola at the point (x^1,y^1) .



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TRIGONOMETRY—FOURTH YEAR.

Time—Three hours.

Values.

6 1. (a) If $\tan A = \frac{\sqrt{1-a^2}}{a}$, find $\cos A$ and $\sin A$.

6 (b) Find the value of C which satisfies the equation
 $\cos^2 C - \sin^2 C = 2 - 5 \cos C$.

7 2. (a) Show how to find $\cos \frac{1}{2} A$ when $\cos A$ is known.

7 (b) Without using your tables find $\cos 112^\circ 30'$.

OR

7 (a) Prove that the radian measure of an angle whose vertex is at the centre of a circle is the ratio of its intercepted arc to the radius of the circle.

7 (b) The perimeter of a sector of a circle is equal to half the circumference of the circle; how many degrees are in the angle of the sector?

7 3. Simplify:

$$(a+b)\cos 180^\circ + (a-b)\sin 90^\circ + 2b \tan 45^\circ.$$

OR

7 Show that the area of a triangle right angled at C is
 $\frac{1}{2}(a^2+b^2)\cos A \cos B$.

9 4. (a) Establish geometrically the formula for the cosine of the sum of two angles.

7 (b) Deduce the formula for $\tan(A+B)$.

[OVER]

Values.

5. Attempt *two* parts only:

7 (a) If $\tan A = \frac{m-1}{m}$ and $\tan B = \frac{1}{2m-1}$ show that
one value of $(A+B)$ is $\frac{\pi}{4}$.

7 (b) Prove that $\tan \frac{A+B}{2} \tan \frac{A-B}{2} = \frac{2 \sin B}{\cos A + \cos B}$

7 (c) In any triangle prove $\tan A = \frac{a \sin B}{c - a \cos B}$

7 6. Show that the area of a parallelogram is equal to one-half of the continued product of its diagonals and the sine of the angle between them.

7 6. Show that the area of a parallelogram is equal to one-

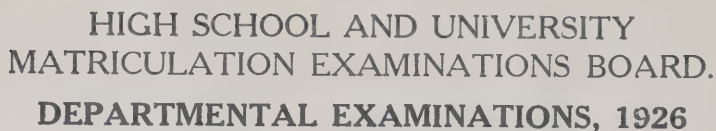
$$\tan^{-1} \frac{a}{b+c} + \tan^{-1} \frac{b}{a+c} = \frac{\pi}{4}.$$

8. Attempt *two* parts only:

11 (a) The altitude of a rock is observed to be 47° ; and after walking 1000 ft. towards it up a slope inclined at 32° to the horizon the altitude is 77° . Find the vertical height of the rock above the first point of observation.

11 (b) The sides of a triangular piece of ground are 4684 ft., 5298 ft. and 6358 ft. respectively. What is the size of its greatest angle?

11 (c) In the triangle ABC, $a=20$ ft. 2 in., $b=30$ ft. 7 in., and $C=41^\circ$. Find the size of the angle A correct to the nearest minute.



Time—Three hours.

Values.

- 4 **1.** (a) Draw a cross section of the stem of a dicotyledon.
Name the regions.
- 5 (b) Describe an experiment to show that a stem is
negatively geotropic.
- 2 (c) Explain two adaptations of Xerophytic stems.
- 1 **2.** (a) In which region in the leaf does photosynthesis
take place?
- 3 Make a diagram of a cell from this region, show-
ing the organs of the cell.
- 2 (b) What chemical change takes place in the elabor-
ated food product in the leaf before it is ready
for transportation?
- 6 (c) Using diagrams, explain *two* adaptations of
plants for controlling transpiration. Give
examples.
- 6 **3.** (a) Describe, illustrating by diagrams, the process of
fertilization in flowers.
- 3 (b) Give *three* examples among insects of adapta-
tions of structure that assist in the cross pol-
lination of flowers.
- 4 (c) Make a drawing, naming the parts, of a longi-
tudinal section of a grain of wheat.
- 1 **4.** (a) Name a plant of the Ranunculaceae order found
in Alberta belonging to a hydrophytic society.
- 4 (b) Show in what *four* ways it has become adapted to
this type of environment.

[OVER]

Values.

- 4 **5.** (a) Explain, using diagrams, alternation of generations as exhibited by the Equisetum.
- 4 (b) Describe the vegetative forms in each generation.
- 4 **6.** (a) Illustrating by diagrams show how the house-fly exhibits *four* characteristics of insects.
- 2 (b) Distinguish between complete and incomplete metamorphosis.
- 3 (c) Describe the life-history of an insect that passes through an incomplete metamorphosis.
- 6 **7.** Compare the process of aerating the blood in the frog with that in the salmon. Illustrate by diagrams.
- 4 **8.** (a) Explain how the interdependence of species maintains a balance in nature. Give *two* examples.
- 2 (b) What is Mendel's theory regarding the inheritance of characteristics?
- 2 **9.** (a) What *two* special characteristics distinguish the Mammals?
- 6 (b) Compare the dentition of the gopher with that of the dog.
- 2 (c) Account for the differences between the two types of dentition.
- 1 **10.** (a) Make a drawing of a protozoan (amoeba or paramoecium) indicating the various organs.
- 6 (b) Indicate how it (amoeba or paramoecium) functions:
 (1) in moving.
 (2) in eating.
 (3) in reproducing.
 (4) in excreting waste.
- 4 (c) Show *two external* and *two internal* differences between a true worm (earthworm) and a grub (cutworm).
- 11.** Discuss, giving examples, the adaptations of birds:
- 3 (1) For life on the plains.
- 3 (2) For life on the water.
- 3 (3) For securing food.



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FRENCH 3.

Time—Three hours.

Values.

20 **1.** *Translate into French:*

- (a) How long have you been reading? I have been reading and sewing for an hour and a half.
- (b) You must have made a mistake; I feel very well: I never felt better in my life.
- (c) She has cut her hand; I wonder if she has hurt herself badly.
- (d) Are you not afraid that you will tire of being in the country?
- (e) I can never go out without my dog following me
- (f) If it is cold in winter we go to the south of France; if it is mild we remain in Canada.
- (g) The doctor has just come; shall I send him up?
- (h) I am glad to know that you are not the only one to say so.
- (i) There is the old lady whom I saw fall in the street yesterday.
- (j) What has become of the apples we bought yesterday afternoon? They are in the cellar.

20 **2.** *Translate into French:*

Napoleon III, Emperor of the French and nephew of the great Napoleon, was chatting one day with his wife, the Empress Eugénie, in the latter's boudoir in the Palace of the Tuileries.

As she was talking somewhat giddily (*étourdissement*) the Emperor said to her jokingly: "Do you know, Madame, the difference between a mirror and yourself?" The Empress was surprised and after having

thought for a moment replied "No." "Well, my dear, the difference is that a mirror reflects and that you do not reflect." "Now, it is my turn," retorted Eugénie sharply, "Do you know the difference between a mirror and yourself?" "No," said Napoleon laughing heartily, "certainly I can't guess." "Well, my dear, the mirror is the more polished."

- 20 3. Write a composition in French of not less than 100 words of a robbery of your house, touching on such points as: when you went to bed; how you were wakened by a noise; you decide to investigate; you get a light; go downstairs; see a man running out of the back door; what he stole, etc.

- 10 4. *Translate into English:*

Oui, elle ne durera plus six mois, fit Richter avec assurance; car, de Kaiserslautern, les Français seront balayés jusqu'à Hornbach, de Hornbach à Sarrebruck, à Metz, et ainsi de suite jusqu'à Paris. Une fois en France, nous trouverons des amis en foule pour nous secourir: la noblesse, le clergé et les honnêtes gens sont tous pour nous; ils n'attendent que notre armée pour se lever. Et quant à ce tas de gueux ramassés à droite et à gauche, sans officiers et sans discipline, qu'est-ce qu'ils peuvent faire contre de vieux soldats, fermes comme des rochers, avançant en bon ordre de bataille, sous la conduite de la vieille race guerrière? Des tas de savetiers sans un seul général, sans même un vrai caporal *schlague*! Des paysans, des mendiants, de vrais sans-culottes, comme ils s'appellent eux-mêmes, je vous le demande, qu'est-ce qu'ils peuvent faire contre des Brunswick, des Wurmser et des centaines d'autres vieux capitaines éprouvés par tous les périls de la guerre de Sept Ans? Ils seront dispersés et périront par milliers, comme les sauterelles en automne."

Toute la salle était alors de l'avis de Richter, et plusieurs disaient:

"A la bonne heure, voilà ce qui s'appelle parler; depuis longtemps nous pensions les mêmes choses."

- 3 (a) Write brief explanatory notes on:
 1. *Schlague*.
 2. *Sans-culottes*.
- 5 (b) Write in full the pres. indic. of: *fit*; *secourir*; *avançant*; *disaient*.
- 2 (c) Write a note on the authorship of *Madame Thérèse*.

10 **5.** *Translate into English:*

- (a) On finit par se rendre maître du feu.
- (b) Mais il faut que tout s'en mêle.
- (c) Enfin voilà le décès constaté, fit l'onde au bout d'un instant, nous pouvons partir.
- (d) Tu jouais à la drogue, tu remuais les dès pour la bonne chance, tu battais la diane.
- (e) Non....Non....elle a reçu son compte....et c'est bien fait.
- (f) Il se moquait de la nouvelle ère républicaine.
- (g) Il approchait de la quarantaine et passait pour être le meilleur médecin du pays.
- (h) Ça vous paye avec des assignats et des coups de dents; mais il tombe mal!
- (i) Il me plaît....il a l'air bon enfant!
- (j) Il se retourna, courant sus la ligne, ventre à terre et criant: "Formez le carré!"

10 **6.** *Translate at sight into English:*

Montréal est la métropole, la grande porte à une extrémité de cette voie qui traverse le Canada, la porte de l'avenue qui mène au Pacifique. La ville s'étale, au large, entre le Mont-Royal, boisé et semé de belles résidences et le port d'où l'on voit surgir les élévateurs colossaux; c'est là que le blé du Canada vient s'amas-serr, avant d'être embarqué pour l'Europe. Si, durant l'hiver, le Saint-Laurent n'était pas fermé par les glaces, la ville fondée par Maisonneuve et illustrée par Jacques Cartier serait la rivale de New York. On parle bien des langues, dans ces villes cosmopolites; les enseignes* sont généralement anglaises; dans certains quartiers, elles sont juives ou chinoises; mais enfin c'est le français qui est la langue dominante, quoique celui que parlent les enfants des quartiers populaires soit parfois déconcertant.

*Enseigne=sign-board.



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HISTORY 3.

Time—Three hours.

NOTE TO CANDIDATES: Candidates will answer *three* questions from Section A, *two* from Section B, and *two* from Section C.

SECTION A.

Values.

- | | |
|----|---|
| 14 | 1. Describe in some detail the Seigniorial System in New France, contrasting it with Feudalism in Old France. What were the advantages and disadvantages of this type of organization for a new country? |
| 2 | 2. (a) What were the reasons for the passage of the Constitutional Act? |
| 6 | (b) What were the terms of the Act? |
| 6 | (c) Discuss the wisdom of making these changes in the constitution of Canada. |
| 14 | 3. Describe the main problems which confronted the first federal cabinet, 1867 - 1873, and discuss its handling of them. |
| 4 | 4. (a) What were the causes of the North-West Rebellion of 1885? |
| 8 | (b) Give an account of the revolt and its suppression, illustrating your answer by a simple sketch-map. |
| 2 | (c) What were the effects upon Canada of this episode in her history? |

[OVER]

SECTION B.

Values.

- 14 **5.** Outline the development of the House of Commons in England, and show clearly the important position which it has come to occupy in the working of the modern constitution.
- 2 **6.** (a) Define the term "constitution."
- 2 (b) Distinguish between a unitary and a federal constitution.
- 2 (c) What advantages does the latter possess over the former for a country like Canada?
- 8 (d) By reference to their respective powers judge whether the Dominion or the Provinces possess the more important sphere of jurisdiction.
- 7.** Distinguish between:
- 3 (a) The powers of reserve, disallowance and veto.
- 3 (b) Closure, adjournment, prorogation and dissolution.
- 3 (c) Privy Council, Cabinet, and Executive Council.
- 5 (d) A bye-law, a bill, an act, an order-in-council.

SECTION C.

- 8.** "The production of economic goods involves the co-operation of four factors or agents of production."
—MacGibbon.
- 15 Name these four factors and show clearly the character and importance of each.
- 9.** "The value of a convenient and flexible credit system is very great."—MacGibbon.
- 15 Make clear the value of such a credit system, and describe in some detail through what agencies and in what manner such flexible credit is afforded for modern business.
- 5 **10.** (a) What are the chief incentives to saving, and what is the importance of this habit?
- 4 (b) What are the main types of borrowers?
- 6 (c) What is interest, and what are the chief factors which affect the interest rate?



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GERMAN 2.

Time—Three hours.

Values.

- 3 **1.** How are adjectives compared in German? Illustrate
your answer by comparing the following adjectives:
5 angenehm; lang; prächtig; Kurz; gut.

- 8 **2.** *Decline together:*
(a) Diese alte Stadt.
(b) Guter alter Käse.
(c) Sein groszes Gebäude.
(d) Jener junge Nachbar.

- 10 **3.** *Translate into German:*
(a) Where had he gone?
(b) Some white bread.
(c) That book is mine.
(d) He must have spoken.
(e) Have you not met him?
(f) Without seeing me.
(g) She has grown a great deal.
(h) We ought not to be here.
(i) On my account.
(j) It is I.

- 3 **4.** *Translate into German:*
(a) The emperor himself was at our house yesterday
morning.

Values.

- 3 (b) How beautiful the fields are! Have you seen the villages in this valley?
- 3 (c) There are rich people in this street, but there are fewer children.
- 4 (d) At what time will you go to Berlin? My train starts at six minutes past nine; please take me to the station.
- 3 (e) Both the people who have much and those that have little want something different.
- 4 (f) That man has come into the garden without my knowing it; where has he gone to?
- 4 (g) After he had died we said we had lost a father; we often stayed at his house.
- 4 (h) I have not succeeded in finding my uncle in order to ask him if I may go.
- 3 (i) Before we go to bed and when we rise, we should open the windows wide.
- 3 (j) Would your aunt be unhappy if she did not remain here?

12 5. *Translate into English:*

“Anfangs ging es ganz gut,” fuhr der Graf fort. “Mein Selim griff aus, dasz seine Hufe kaum den Boden berührten und das keuchende Dampfrosz mehr und mehr zurückblieb. Schon war die Hälfte des Weges zurückgelegt, und ich näherte mich einer Stelle, wo die Strasse die Eisenbahn durchschneidet. Die Barrieren waren geschlossen und der Bahnwärter winkt mir schon von fern mit der Fahne: “Zurück!” Was tun? Ich drücke dem Selim die Sporen in die Weichen, und mein braves Tier nimmt mit einem gewaltigen Satz das erste Hindernis. Aber, oh weh! Der Sattelgurt ist gerissen, und ich stürze beim Niederfallen des Pferdes auf die Schienen. Zwar arbeitete ich mich rasch empor und packe den Selim noch glücklich an der Mähne, aber da kommt auch schon schnaubend und heulend der Zug herbeigerast. Entsetzt bäumt sich der Selim und—mein letzter Augenblick schien gekommen—”

- 4 (a) Indicating the auxiliary of tense write out the principal parts of the following verbs found in the extract:

ging; fuhr... fort; zurückblieb; näherte mich; durchschneidet; tun; nimmt; kommt.

- 4 (b) Connect the incident related in the extract with the general thread of the story.

Values.

6. Translate into English the following expressions occurring in *Der Schwiegersohn*:

- 1 (a) Wenn man jung ist, da ist gleish Fener in Dach.
- 1 (b) wer hätte uns etwas vorzuwerfen? Was kann uns geischehen?
- 2 (c) Ein Doktor darf nicht so mir nichts dir nichts mit der Thür ins Haus fallen.
- 1 (d) seine Stirn legte sich in Falten.
- 1 (e) er veranlaszte die Kanzleirätin zu der Frage.
- 2 (f) Das war dem Kanzleirat aus der Seele gesprochen
- 1 (g) Sie stach sich beim Nähen in die Finger.
- 1 (h) Wir wissen was sich gehört.

10 **7.** *Translate at sight into English:*

Die beiden Ziegen.

Zwei Ziegen begegneten sich auf einem schmalen Stege, der über einen tiefen reizenden Waldstrom führte; die eine wollte herüber, die andere hinüber.

“Geh’ mir aus dem Wege!” sagte die eine. “Das wäre mir schön,” rief die andere. “Geh’ du zurück und lasz mich hinüber; ich war zuerst auf der Brücke.”

“Was fällt dir ein?” versetzte die erste, “ich bin so viel älter als du, und soll dir weichen? nimmermehr!”

Beide bestanden immer hartnäckiger darauf, dasz sie einander nicht nachgeben wollten; jede wollte zuerst hinüber, und so kam es vom Zanke zum Streit und zu Thätlichkeiten. Sie hielten ihre Hörner vorwärts und rannten zornig gegen einander. Von dem heftigen Stosze verloren aber beide das Gleichgewicht; sie stürzten und fielen mit einander über den schmalen Steg hinab in den reizenden Waldstrom, aus welchem sie sich nur mit groszer Anstrengung an’s Ufer retteten.



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COMPOSITION 4.

Time—Three hours.

Values.

After he had been shown to her room by the groom of the chamber, who filled many offices besides in her Ladyship's modest household, and after a proper interval, his elderly goddess Diana vouchsafed to appear to the young man. A blackamoor in a Turkish habit, with red boots and a silver collar, on which the Viscountess's arms were engraven, preceded her and bore here her cushion; then came her gentlewoman; a little pack of spaniels barking and frisking about preceded the austere huntress—then, behold, the Viscountess herself "dropping odors." Esmond recollected from his childhood that rich aroma of musk which his mother-in-law (for she may be called so) exhaled. As the sky grows redder and redder towards sunset, so, in the decline of her years, the cheeks of my Lady Dowager blushed more deeply. Her face was illuminated with vermilion, which appeared the brighter from the white paint employed to set it off. She wore the ringlets which had been the fashion in King Charles's time; whereas the ladies of King William's had head-dresses like the towers of Cybele. Her eyes gleamed out of the midst of this queer structure of paint, dyes, and pomatums. Such was my Lady Viscountess, Mr. Esmond's father's widow.

- | | |
|---|---|
| 1 | 1. (a) To what type of prose composition does the above paragraph belong? |
| 4 | (b) What is the relation between the first sentence and the second? Between the first, second and the last? Between the first two sentences and the remainder of the paragraph? |
| 2 | (c) What is the effect on the remainder of the paragraph of the introduction in the first sentence of the metaphor, "his elderly goddess Diana"? |
| 2 | (d) What devices has the author used to make the second sentence effective? |

Values.

- 3 (e) Explain why the following words are particularly appropriate: vouchsafe, blackamoor, aroma, exhaled, blushed, illuminated.
- 3 (f) What figure of speech is contained in the phrase, "like the towers of Cybele"? What does it add to the quality of the sentence in which it is found? Why?
- 16 **2.** Following the method of development used in the paragraph quoted in question 1, but without imitating unnecessarily the style or the selection and arrangement of details, write an original paragraph of approximately the same length, choosing *one* of the following for your subject. Make your paragraph present a vivid picture.
- (a) An Old-fashioned Tramp.
- (b) My Nurse at the Hospital.
- (c) The Prisoner.
- (d) The Immigrant.
- (e) My New Horse.
- (f) The Latest Arrival at the Zoo.
- 2 **3.** (a) Distinguish between denotation and connotation as applied to the subject of diction.
- 8 (b) Substitute for the words italicized in the following passage others having more appropriate connotations or more correct denotations:
- As the *bickering* light of my little fire of wood died away to *weak flashes*, loneliness began to *hedge me in* and the darkness of the *large forest stunned* me. I could just make out the *hazy big stalk* of the tree which *mounted* at my back. In front, I could see nothing but moving shadows which became opaque night when my fire *stumbled* at last into ruins. A coyote *shouted tearfully* on the hill; another answered him *greedily*. I *got* into my blankets and *joyfully* closed my eyes.
- 4 (c) Criticize the rhetorical use or choice of words in the following sentences:
- (1) It was just about then, I think, if I am not wrong, that Jones entered by passing through the door.
- (2) I have come to felicitate my colleagues in this laudable enterprise, upon the indestructible results of their multifarious endeavours.

Values.

- 15 4. Rewrite the following sentences in such a way as to remove their rhetorical defects. In your revision do not increase the number of sentences.

- (a) In those days the mail was carried by men on horseback from place to place, exchanging the mail at each town, one man covering a large territory.
- (b) In speaking of Jasper he begins by telling where it is; second, we are told how to reach it; third, he names the families that make up the summer colony; fourth, the good times at Jasper; fifth, certain unpleasant features are mentioned.
- (c) His father, who was an attorney and well-to-do, was of an old Scotch family, and so was his mother also, who was the daughter of a distinguished physician in Edinburgh.
- (d) Mr. George Smith, now vice-president and director of the bank, its cashier at organization, and who has been officially connected with it many years, celebrates his eightieth birthday tomorrow.
- (e) Aside from learning to swim because of the healthy exercise and the enjoyment, there is something more to be considered, and that is that only once in your life may the art be necessary, but that one time may save your life.

- 40 5. Write a composition of at least *two* pages, choosing as your theme *one* of the following topics. Endeavour to make your essay effective by following a good plan, avoiding mechanical errors and expressing ideas in a clear but interesting manner. Give particular attention to the selection and arrangement of details and seek, as far as possible, without becoming stilted or unnatural, to attain to some individuality of style.

- (a) I Go for a Stroll and See a Strange Sight.
- (b) The Last of the Organ-grinders.
- (c) Seen from a Park Bench.
- (d) My First Experience of Homesickness.
- (e) A Classmate I Admire.
- (f) The Use and Abuse of Athletics.
- (g) A Case of Mistaken Identity.
- (h) Alberta's Need of Good Roads.



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ALGEBRA 2.

Time—Three hours.

Values.

- 8 **1.** Find the H. C. F. of: $4x^3 - 3x^2 - 24x - 9$ and $8x^3 - 2x^2 - 53x - 39$.

Find the L. C. M. of: $3a^2 + 9ab$, $2a^3 - 18ab^2$,
 $a^3 + 6a^2b + 9ab^2$.

- 7 **2.** Simplify: $\frac{a^2 - ab}{a^3 - b^3} + \frac{ab + b^2}{a^3 + b^3} + \frac{2a^2b}{a^4 + a^2b^2 + b^4}$

- 9 **3.** A man has \$3000.00 invested, part at $4\frac{3}{4}\%$ and the rest at $5\frac{1}{4}\%$. He receives \$65.00 per annum more income from the former than from the latter. How much is invested at each rate?

- 8 **4.** Solve the equation: $\sqrt{19+x} - \sqrt{15-x} = \frac{24}{\sqrt{19+x}}$

- 6 **5.** The area A of the cross section of a chimney in square feet, which is necessary to carry off the smoke, is indicated by the formula, $A = \frac{.6P}{\sqrt{h}}$ where P = number of pounds of coal burned per hour, h = height of chimney in feet.

What is the area of the cross section of a chimney 64 feet high in order to carry off the smoke if 500 pounds of coal are burned per hour?

- 7 **6.** Simplify:

$$\frac{2^{n+1}}{(2^n)^{n-1}} \times \frac{(2^{n-1})^{n+1}}{4^{n+1}}$$

[OVER]

Values.

3 **7.** (a) Prove that $a^0=1$.

6 (b) If $x=a^2+1$ and $y=a^{-2}+1$,

Show that $\frac{xy+x-y}{xy-x+y} = a^2$.

8 **8.** Solve for x and y : $x^2-3y^2=4$.

$$x^2+xy+y^2=28.$$

7 **9.** Solve using the formula: $x^2+x(3b-2a)=6ab$.

5 **10.** (a) For what value of K will the equation,

$$3x^2-6x+K=0, \text{ have equal roots?}$$

5 (b) Show that the roots of the equation,

$$x^2-2px+p^2-q^2+2qr-r^2=0, \text{ are rational.}$$

12 **11.** A farmer sold his wheat for \$540.00. A month later the price of wheat advanced 10c a bushel, and he found that if he had held his wheat until that time, he could have received the same money and have had 75 bushels left. How much per bushel did he receive for his wheat?

9 **12.** Solve by graphical method the equations:

$$x^2+y^2=18.$$

$$x+y=4.$$



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GEOMETRY 2

Time—Three hours.

Values.

1. If a parallelogram is inscribed in a circle—
 - 2 (a) The arcs cut off by opposite sides are equal.
 - 2 (b) The diagonals are diameters, and their point of intersection is the centre of the circle.
 - 2 (c) What kind of a parallelogram is it? Give proof.
- 9 2. (a) If the opposite sides of a quadrilateral be together equal to two right angles, the circle which passes through three of its angular points also passes through the fourth. IV-7 Conv.
- 5 (b) Through a given point draw a straight line which shall cut off a cyclic quadrilateral from a given triangle.
- 9 3. (a) In a given circle to inscribe a triangle equiangular to a given triangle. IV-16.
- 6 (b) In a given circle to describe a square.
- 9 4. (a) If the vertical angle of a triangle be bisected by a straight line which also cuts the base, the segments of the base have the same ratio which the other sides of the triangle have to one another. III-3.
- 2 (b) State the converse of (a).
- 5 (c) The base of a triangle is 6 inches and the sides 3 inches and 5 inches respectively. Find the lengths of the segments of the base made by the bisector of the angle at the vertex.

[OVER]

Values.

- 6 **5.** (a) Which of the following are, and which are not, similar figures? Give reasons in each case.
- (1) Two rectangles.
 - (2) Two squares.
 - (3) Two isosceles triangles.
 - (4) Two equilateral triangles.
 - (5) Two rectangles 8×3 and 16×6 .
 - (6) Two right-angled triangles.
- 6 (b) The median of a triangle from the vertex to the base bisects all straight lines parallel to the side to which the median is drawn.
- 2 (c) State the above fact in general terms, using the word "locus."
- 9 **6.** (a) In a right-angled triangle, the square on the hypotenuse is equal to the sum of the squares on the other two sides. III-13.
- 5 (b) Prove that the relation in (a) is true also for similar triangles similarly described on the sides.

OR

- 5 To construct a triangle which shall be similar to a given triangle but twice the area of it.
- 9 **7.** To draw a common tangent to two given circles. Add. 16.
- 6 **8.** Two chords touch internally at A . BC is a chord of the larger circle and a tangent to the smaller circle at D . Prove that $AB : AC = BD : DC$.
- 6 **9.** The bisector of the Angle A of the triangle ABC , which is inscribed in a circle cuts BC at X and the circle at Y . Prove that the rectangle $AB.AC = \text{rectangle } AX.AY$.



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ALGEBRA 3.

Time—Three hours.

Values.

7 **1.** Solve $x + y + z = 13$

$$x^2 + y^2 + z^2 = 65$$

$$xy = 10$$

OR

$$x^2 + y^2 + x + y = 18.$$

$$6(x + y) = 5xy.$$

6 **2.** Find the value of $\frac{a(b-c)}{a-b}$ when a , b , and c are in

(1) A.P., (2) in G.P., (3) in H.P.

7 **3.** The Arithmetic mean between two numbers exceeds the Geometric mean by 55, and the Geometric mean exceeds the Harmonic mean by 44; find the numbers.

6 **4.** Find the 50th term of the series 3, 4, 6,

7 **5.** Sum $1 + 2x + 3x^2 + 4x^3 + \dots$ to n terms and to infinity, x being less than unity.

7 **6.** The diameters of the cross sections of two water pipes are as 3:5 and the velocities of the water through the pipes are as 3:4. At the end of an hour 1460 gallons more have flowed through the second pipe than through the first. Find the number of gallons which flow through each pipe per hour.

OR

Values.

7 If $\frac{x}{p+q-r} = \frac{y}{q+r-p} = \frac{z}{r+p-q}$, prove
 $(p-q)x + (q-r)y + (r-p)z = 0$.

7 7. If the roots of $x^2 - px + q = 0$ are two consecutive integers, prove that $p^2 - 4q - 1 = 0$.

8 8. Given that y varies as the sum of three quantities, the first of which is constant, the second varies as x , and the third varies as x^2 , and when $x = a$, $2a$, and $3a$, $y = 0$, a , and $4a$, find the value of y when $x = (n+1)a$.

OR

8 Two soldiers are awarded pensions in proportion to the square root of the number of years they have served. One has served 9 years longer than the other and receives a pension greater by \$250. If the first had given $4\frac{3}{4}$ years less of service their pensions would have been in the proportion of 9:8. How long had they served and what were their respective pensions?

8 9. The driver of a four-horse coach can choose his horses from a stable of 6 white horses and 8 black horses, but he must not pair two horses of different colors. In how many ways may he choose his 4 horses?

OR

8 On a shelf are 20 books, of which 8 form a set; in how many ways can they be arranged (1) keeping the set in order and unbroken; (2) keeping them in order but allowing other books between; (3) keeping the set together but not in order?

7 10. Explain how to find the coefficient of (x^r) in the expansion of $(a+x)^n$.

6 11. Find the 20th term in the expansion of $(2b + \frac{a}{4})^{32}$.

12. Attempt *two* parts only:

7 (a) Expand $(1-x)^{-3}$ to 5 terms and write the general term of the expansion in its simplest form.

Values.

7

(b) Find the coefficient of x^{20} in the expansion of

$$\frac{1-2x}{(1-x)^2}$$

7

(c) Prove $1 + \frac{3}{4} + \frac{3.5}{4.8} + \frac{3.5.7}{4.8.12} + \dots = \sqrt{8}$.

10

13. What annuity, to continue 20 years, can be purchased for \$10,000, allowing compound interest at 5%?

100



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ARITHMETIC—THIRD YEAR.

Time—Three hours.

Values.

- 10 **1.** A triangular pyramid of metal having a vertical height of 20 inches and base measurements of 13, 14 and 15 inches, was melted and formed into a bar having a uniform rectangular cross section $1\frac{3}{4}$ inches by 4 inches. Find the length of the bar.
- 3 **2.** (a) A sphere 4 cm. in diameter weighs 32 grams. Find the weight of a sphere, made of the same material, 8 cm. in diameter.
- 6 (b) Find the weight in Kg. of water which a spherical vessel, the internal diameter of which is 8 dm., will contain.
- 8 **3.** A merchant bought 12000 lbs. of tea at 56 cents per pound. He insured it for $\frac{5}{6}$ its value, paying a rate of $1\frac{1}{4}\%$. Freight cost him 25 cents per cwt. and cartage \$2 per ton. Assuming that 2% of the gross amount is lost in handling, what rate profit on the gross cost will he realize by selling the tea at \$1.00 per pound?
- 8 **4.** A line of shoes cost \$33.00 per dozen pairs. The expenses of selling are 15% of the selling price, and bad debts 5% of selling price. At what price per pair must the shoes be sold so that a net profit remains of 25% of the selling price?
- 8 **5.** The taxes on a property assessed at \$72000, tax rate 45 mills on the \$, are provided by an investment in 6% bonds at 5% premium. What is the amount of money invested in the bonds, brokerage $\frac{1}{8}\%$?

[OVER]

Values.

- 10 **6.** The formula $F = \frac{9}{5}C + 32$ enables us to translate the reading on the Fahrenheit thermometer to the corresponding reading on the Centigrade thermometer. (F=the number of Fahrenheit units and C=the number of Centigrade units.)

Graph the above linear equation. Determine from this graph the corresponding Fahrenheit readings for the following Centigrade readings: 5° , 30° . Determine from this graph the Centigrade reading which corresponds to $-8^{\circ}F$, $212^{\circ}F$ and $-40^{\circ}F$.

- 2 **7.** Write a note signed by Henry Clay in favor of James Nodwell for \$390 with interest at 10% per annum. Date of note is March 3rd, 1926, time three months.

8 This note was discounted at a bank on May 5th, 1926; find the proceeds if the bank charges 8% per annum.

- 3 **8.** The longitude of Calgary is 114° West, and of San Francisco $122^{\circ} 25'W$. When it is 2 P.M. at Calgary what time is it at San Francisco (Standard Time)?
5 How much do Standard Time and true time differ at San Francisco?

- 10 **9.** Exchange, Montreal on Paris is 17.5 francs to the dollar; Paris on London is 77.5 francs to the pound. What sum will purchase in Montreal a bill of exchange on London, via Paris, for £586 10 shillings?

- 10 **10.** The distance of the star Castor from the earth is approximately 9.59×10^{13} miles. The velocity of light is 186,330 miles per second. Find the number of years taken by light from Castor to reach the earth. (Candidates are required to use logarithms in the calculation of this question.)

- 9 **11.** A man buys a house for \$3000 cash and \$1500 at the end of each year for three years. What is the equivalent cash value, taking money worth 8% per annum compounded yearly?

Present Worth Table			
Period	8%	Log 9.59	is .98182
		1.86330	" .27028
		6.	" .77815
		2.4	" .38021
1	.925926	3.65	" .56229
2	.857339	1.632	" .21274
3	.793832		



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COMPOSITION 3.

Time—Three hours.

Values.

As *there* appeared *something* reluctantly good in the character of my companion, I must own *it* surprised me what could be his motives for thus concealing virtues which *others* take pains to display. I was unable to repress my desire of knowing the history of a man who thus seemed to act under continuous restraint, and *whose* benevolence was rather the *effect* of appetite than reason.

- 14 1. (a) Pick out the subordinate clauses in the above extract and give their kind and relation.
- 6 (b) Parse the italicized words.
- 5 2. (a) Name and exemplify the *five* distinct uses of the Nominative Case in English.
- 5 (b) "If now, we consider once again the various uses of nouns or pronouns in the objective case we shall see that there are at least five different constructions in which the verb may be completed by two objects."

Explain the character of the double objectives in *each* of the following sentences:

- (1) The House of Commons appointed Lemieux speaker.
- (2) Thy mistress leads thee a dog's life of it.
- (3) I sent your father a letter when I arrived there.
- (4) The clerk charged five dollars a yard for the cloth.
- (5) In thy right hand lead with thee,
The mountain nymph, sweet Liberty.

Values.

- 5 3. (a) Write sentences to illustrate the following kinds of verb phrases. Underline your example in each case.
- (1) Present progressive.
 - (2) Past emphatic.
 - (3) Past perfect.
 - (4) Promissive future.
 - (5) Future past.
- 5 (b) Account for the use of *will* in *each* of the following sentences:
- (1) You and I will lead the procession.
 - (2) Students will please leave their exercises lying on my desk.
 - (3) She is a strange character and will sometimes sulk for days.
 - (4) He will probably accept the nomination.
 - (5) What I will to do I shall do.
- 3 4. (a) Classify adjectives according to their relation and give an example of *each* class.
- 1 (b) Parse the word "*wrong*" in the sentence: I believe the man *wrong*.
- 2 (c) Compose sentences to show the use of the ordinal "first" (1) as a noun, (2) as an adverb.
- 4 (d) Distinguish between the meanings of the following pairs of sentences:
- (1) The bride wore a beautiful and a costly gown.
The bride wore a beautiful and costly gown.
 - (2) My friend gives great praise to the owner and editor of this newspaper.
My friend gives great praise to the owner and the editor of this newspaper.
 - (3) The servant handed him a cup and saucer.
The servant handed him a cup and a saucer.
 - (4) Brazil is larger than all the other countries of South America.
Brazil is larger than any other country of South America.
- 15 5. The following three topic sentences require, respectively, for their most appropriate expansion, a narrative, descriptive or expository treatment. Choose *one* of the sentences and, following the most suitable method of treatment, expand it into an effective paragraph between fifteen and twenty lines in length.

Values.

- (a) Everything that happened that morning pointed to my failure.
- (b) Every detail in this striking scene appealed strongly to me.
- (c) I am justified in my bad opinion of him by his conduct.

35 **6.** Write an essay, at least two pages in length, choosing as your theme *one* of the following subjects. Endeavor to make your composition as effective as possible by avoiding mechanical errors, making a good selection and arrangement of details and expressing ideas in a clear, vivid and interesting manner.

- (a) The Value of an Education.
- (b) Our Family Doctor.
- (c) I Go Sight-seeing and Have an Adventure.
- (d) Some Types of Students I have Observed.
- (e) When the Alarm Clock Rings.
- (f) My Favorite City Park.
- (g) I Open My First Bank Account.



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CHEMISTRY 1.

Time—Three hours.

Values.

1. Describe experiments, *one each*, to illustrate the following:
 - 2 (a) Physical change.
 - 2 (b) A chemical change which results in chemical combination.
 - 2 (c) A chemical change which results in chemical decomposition.
- 5 2. (a) Describe, using a diagram, the preparation of hydrogen from water by the electrolytic method.
- 2 (b) State what happens when a lighted taper is passed into an inverted jar of hydrogen and then slowly withdrawn.
- 4 (c) Describe an experiment to show the reducing action of hydrogen.
- 2 (d) Write an equation to express the reaction which takes place when steam is passed through a red hot iron tube containing clean iron filings.
3. Describe, using a diagram:
 - 5 (a) A method of obtaining nitrogen from air.
 - 3 (b) State *three* important economic uses of nitrogen or its compounds.
- 2 4. (a) Write an equation to express the reaction which takes place in the laboratory preparation of hydrogen chloride.

Values.

- | | | |
|---|-----|---|
| 1 | (b) | Name the other substance formed in the preparation of hydrogen chloride. |
| 1 | (c) | How would you collect hydrogen chloride in the laboratory? |
| | (d) | Hydrogen chloride is passed into a solution of silver nitrate. |
| 2 | (1) | Write the equation expressing the chemical reaction. |
| 1 | (2) | Describe the appearance of the precipitate. |
| 2 | (3) | State the chemical significance of the reaction in (d). |
| | | |
| 5 | 5. | (a) Describe a laboratory method for the preparation and the collection of sulphur dioxide. |
| 2 | (b) | Sulphur dioxide is passed into a solution of caustic potash until the solution is neutral to litmus paper. Write the equation expressing this reaction. |
| 2 | (c) | State <i>two</i> important economic uses of sulphur dioxide. |
| | | |
| 5 | 6. | (a) Name <i>five</i> properties which sodium and potassium have in common. |
| 6 | (b) | Write equations to express the <i>three</i> reactions which take place in the manufacture of sodium carbonate by the LeBlanc process. |
| 2 | (c) | State <i>four</i> economic uses of sodium carbonate. |
| | | |
| 6 | 7. | Describe an experimental synthetic method to discover the proportions in which hydrogen and oxygen unite to form water. |
| | | |
| 1 | 8. | (a) What is a hydroxide? |
| 3 | (b) | Show by description of an experiment how to form the hydroxide of potassium. |
| 5 | (c) | Write formulae for the hydroxides of calcium, ammonium, zinc, iron and magnesium. |
| | | |
| | 9. | Write an equation expressing the reaction which takes place in <i>each</i> of the following: |
| 2 | (a) | The preparation of chlorine by Deacon's process. |
| 2 | (b) | Chlorine is passed into a solution of sodium thiosulphate in water. |

Values.

- 4 (c) Sodium carbonate and sulphuric acid are mixed in a test tube, and the gas formed is passed into lime water.
- 2 (d) Water is added drop by drop to aluminium carbide contained in a glass vessel.
- 2 (e) Sulphuric acid is prepared by the contact method.
- 2 **10.** (a) State the law of multiple proportions.
- 4 (b) Illustrate the law asked for in (a), by using the compounds which carbon and hydrogen respectively form with oxygen.
- 2 (c) State Dalton's atomic theory.
- 7 **11.** Two hundred and fourteen grams of pure ammonium chloride are heated with an excess of slaked lime until all reaction ceases. The gas given off is collected and measured at 17°C temperature and 780 mm. pressure. Find its volume. (N=14, H=1, Cl=35.5, Ca=40, O=16.)



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LITERATURE 3.

Time—Three hours.

Values.

- 4 1. What is meant by "trial by battle"? How was it thought to serve the ends of justice? Describe the ceremonial procedure as shown in *Richard II*.
- 12 2. *Richard II* falls into two parts: (1) the first two acts which provide one conception of Richard's character, based on his own deeds and what others say about him; (2) the last three, in which his soliloquies reveal him in an altogether different light. Describe the character of Richard as displayed in the first two acts; his character as revealed in the last three acts. In your opinion are these two conceptions reconcilable? Answer fully.

6 3. *King Richard—*

What says King Bolingbroke? Will his Majesty
Give Richard leave to live till Richard die?
You make a leg, and Bolingbroke says ay.

Northumberland—

My lord, in the *base court* he doth attend
To speak with you, may it please you to come down?

King Richard—

Down, down I come; *like glist'ring Phaeton*
Wanting the manage of unruly jades.
In the *base court*? *base court*, where kings grow base
To come at traitors' calls and *do them grace.*

Comment on the second question in Richard's opening speech, and explain the italicized words and phrases in the quotation.

Values.

- 6 4. What deeds or achievements of Arthur are mentioned in *Lancelot and Elaine*? What qualities are attributed to him, and what is the attitude of his subjects toward him in *Lancelot and Elaine*?
- 4 5. (a) Quote *eight* consecutive lines from *one* of the following poems: Locksley Hall, Evelyn Hope, To Lucasta.
- 4 (b) Quote *eight* lines from *one* of the speeches of Richard II.
- 6 6. (a) Give as fully as possible the thought of Shakespeare's sonnet, "That time of year," and of Wordsworth's sonnet, "Two Voices are there."
- 2 (b) Contrast the nature of the subject-matter in these two sonnets as illustrating two very different uses to which the sonnet-form may be put.
- 4 (c) Describe the two sonnet-types exemplified in these two sonnets. What variation is there in Wordsworth's sonnet from the type to which it is meant to conform?
7. Above it, behold the archbishop's most fatherly of rebukes,
And beneath, with his *crown and his lion*, some little new law of the duke's!
Or a sonnet, *with flowery marge*, to the Reverend Don So-and-So
Who is *Dante*, Boccaccio, Petrarca, Saint Jerome, and *Cicero*.
- 1 (a) Name the poem in which this passage occurs.
- 1 (b) What name is applied to the type of poem from which the passage is taken?
- 4 (c) Describe the character of the speaker as revealed in the whole poem.
- 2 (d) Explain the meaning of or the references contained in the parts in italics.

12 8. *The Chroniclers*.

"Kinsmen, you shall behold
Our stage in mimic action mould
A man's character."

Give your impression of the character of Lincoln in the opening scene of the play. Is the statement contained in the quotation justified? Discuss this point supporting your view with definite reasons.

Values.

2 **9.** (a) State in general terms the two main objects of Clive's policy in India after 1765.

6 (b) Recount the means Clive used in attempting to carry out these objects.

4 **10.** "The great events which had taken place in India had called into existence a new class of Englishmen, to whom their countrymen gave the name of Nabobs." (Macaulay's Essay on Clive.)

"General Clive is arrived all over estates and diamonds. If a beggar asks charity, he says, 'Friend, I have no small brilliants about me.'" (Horace Walpole. Letter dated Aug. 1, 1760.)

(a) What does Macaulay say about the "nabob," and about Clive as Nabob?

(b) What does Walpole's ironical comment indicate as to one aspect of the contemporary attitude in England toward Clive?

SUPPLEMENTARY LITERATURE.

10 **11.** Follow through the life of Oliver Twist, merely indicating in order the places in which he lived.

10 **12.** Giving *one* paragraph to *each* make clear the part played in the story by the following characters: Tom Faggus, Sir Ensor, Mrs. Ridd.

Values.

- 3 (b) How beautiful the fields are! Have you seen the villages in this valley?
- 3 (c) There are rich people in this street, but there are fewer children.
- 4 (d) At what time will you go to Berlin? My train starts at six minutes past nine; please take me to the station.
- 3 (e) Both the people who have much and those that have little want something different.
- 4 (f) That man has come into the garden without my knowing it; where has he gone to?
- 4 (g) After he had died we said we had lost a father; we often stayed at his house.
- 4 (h) I have not succeeded in finding my uncle in order to ask him if I may go.
- 3 (i) Before we go to bed and when we rise, we should open the windows wide.
- 3 (j) Would your aunt be unhappy if she did not remain here?

12 5. *Translate into English:*

“Anfangs ging es ganz gut,” fuhr der Graf fort. “Mein Selim griff aus, dasz seine Hufe kaum den Boden berührten und das keuchende Dampfrosz mehr und mehr zurückblieb. Schon war die Hälfte des Weges zurückgelegt, und ich näherte mich einer Stelle, wo die Strasse die Eisenbahn durchschneidet. Die Barrieren waren geschlossen und der Bahnwärter winkt mir schon von fern mit der Fahne: “Zurück!” Was tun? Ich drücke dem Selim die Sporen in die Weichen, und mein braves Tier nimmt mit einem gewaltigen Satz das erste Hindernis. Aber, oh weh! Der Satteltgurt ist gerissen, und ich stürze beim Niederfallen des Pferdes auf die Schienen. Zwar arbeitete ich mich rasch empor und packte den Selim noch glücklich an der Mähne, aber da kommt auch schon schnaubend und heulend der Zug herbeigerast. Entsetzt bäumt sich der Selim und—mein letzter Augenblick schien gekommen—”

- 4 (a) Indicating the auxiliary of tense write out the principal parts of the following verbs found in in the extract:

ging; fuhr....fort; zurückblieb; näherte mich; durchschneidet; tun; nimmt; kommt.

- 4 (b) Connect the incident related in the extract with the general thread of the story.

Values.

6. Translate into English the following expressions occurring in *Der Schwiegersohn*:

- 1 (a) Wenn man jung ist, da ist gleich Fener in Dach.
- 1 (b) wer hätte uns etwas vorzuwerfen? Was kann uns geischehen?
- 2 (c) Ein Doktor darf nicht so mir nichts dir nichts mit der Thür ins Haus fallen.
- 1 (d) seine Stirn legte sich in Falten.
- 1 (e) er veranlaszte die Kanzleirätin zu der Frage.
- 2 (f) Das war dem Kanzleirat aus der Seele gesprochen
- 1 (g) Sie stach sich beim Nähen in die Finger.
- 1 (h) Wir wissen was sich gehört.

10 **7.** *Translate at sight into English:*

Die beiden Ziegen.

Zwei Ziegen begegneten sich auf einem schmalen Stege, der über einen tiefen reissenden Waldstrom führte; die eine wollte herüber, die andere hinüber.

“Geh’ mir aus dem Wege!” sagte die eine. “Das wäre mir schön,” rief die andere. “Geh’ du zurück und lasz mich hinüber; ich war zuerst auf der Brücke.”

“Was fällt dir ein?” versetzte die erste, “ich bin so viel älter als du, und soll dir weichen? nimmermehr!”

Beide bestanden immer hartnäckiger darauf, dasz sie einander nicht nachgeben wollten; jede wollte zuerst hinüber, und so kam es vom Zanke zum Streit und zu Thätlichkeiten. Sie hielten ihre Hörner vorwärts und rannten zornig gegen einander. Von dem heftigen Stosze verloren aber beide das Gleichgewicht; sie stürzten und fielen mit einander über den schmalen Steg hinab in den reissenden Waldstrom, aus welchem sie sich nur mit groszer Anstrengung an’s Ufer retteten.



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LATIN 2.

Time—Three hours.

SECTION A (Authors and Sight Translation)

Values.

- 8 **1.** Translate into English:

Ut enim populi Romani honores quondam fuerunt rari et tenues ob eamque causam gloriosi, nunc autem effusi atque obsoleti, sic olim apud Athenienses fuisse reperimus. Namque huic Miltiadi qui Athenas totamque Graeciam liberarat, talis honos tributus est in porticu quae Poecile vocatur, cum pugna depingeretur Marathonica, ut in decem praetorum numero prima eius imago poneretur isque hortaretur milites proeliumque committeret. Idem ille populus, posteaquam maius imperium est nactus et largitione magistratuum corruptus est, trecentas statuas Demetrio Phalereo decrevit.

- 1 (a) What view about the Persian invasion had Miltiades urged upon his colleagues from the first?
- 1 (b) What point is Nepos seeking to prove by this comparison of Greece and Rome?

- 8 **2.** Translate into English:

Fuisse patientem suorumque iniurias ferentem civium, quod se patriae irasci nefas esse duceret, haec sunt testimonia. Cum eum propter invidiam cives sui praeficere exercitui nolissent duxque esset delectus belli imperitus, cuius errore eo esset deducta illa multitudo militum ut omnes de salute pertimescerent quod locorum angustiis clausi ab hostibus obsidebantur, desiderari coepta est Epaminondae diligentia; erat enim ibi privatus numero militis. A quo cum peterent opem, nullam adhibuit memoriam contumeliae, et exercitum obsidione liberatum domum reduxit incolumem.

- 2 (a) Tell the story of the reply made by Epaminondas when Pelopidas reproached him for having no children.

8 3. Translate into English:

Dum bibit illa datum, duri puer oris et audax
 constitit ante deam risitque avidamque vocavit.
 Offensa est, neque adhuc epota parte loquentem
 cum liquido mixta perfudit diva polenta.
 Combibit os maculas et, quae modo bracchia gessit,
 crura gerit; cauda est mutatis addita membris;
 inque brevem formam, ne sit vis magna nocendi,
 contrahitur, parvaeque minor mensura lacerta est.

- 1 (a) *Bibit illa.* To what goddess is reference here made?
- 1 (b) What is the meaning of the name *Metamorphoses*, and how does it apply to the selections of Ovid you have read?

4 4. Translate into English:

Daedalus interea, Creten longumque perosus
 exilium tactusque loci natalis amore,
 clausus erat pelago. "Terras licet" inquit "et undas
 obstruat, at caelum certe patet; ibimus illac;
 omnia possideat, non possidet aera Minos."

- 1 (a) What was the native city of Daedalus? Why had he been taken to Crete?

4 5. Translate into English:

Iam vada Cephissi Panopesque evaserat arva;
 bos stetit et tollens speciosam cornibus altis
 ad caelum frontem, mugitibus impulit auras,
 atque ita respiciens comites sua terga sequentes,
 procubuit teneraque latus submitit in herba.

- 1 (a) What was the significance of these actions according to the oracle?

10 6. Translate into English at sight:

The Fascination exercised by Alcibiades
 on the Athenians.

Cum imperatoribus obviam universa civitas in Piraeum descendisset, tanta fuit omnium expectatio visendi Alcibiadis ut ad eius triremem volgus conflueret proinde ac si solus advenisset. Sic enim populo erat persuasum et adversas superiores et praesentes secundas res accidisse eius opera. Itaque et Siciliam amissam et Lacedaemoniorum victorias culpaе suae tribuebant, quod talem virum e civitate expulissent, neque id sine causa arbitrari videbantur.

Obviam—to meet.
Piraeus is the harbor of Athens.
Triremis—cruiser.
Proinde ac si—just as if.
Res adversae—misfortune.
Res secundae—success.
Opera—agency.

SECTION B (*Grammar and Prose Composition*)

1. Decline in combination throughout both numbers:

3 (a) *ille filius infamis*;

2 (b) *idem exercitus*.

3 **2.** Write the *genitive singular* of *aetas* and *iter*, the *ablative singular* of *homo* and *cornu*, the *nominative plural* of *agmen* and *mare*.

5 **3.** Give the dative singular of *se*:
 the genitive singular of *is*;
 the accusative singular neuter of *quisquam*;
 the neuter plural nominative of *iste*;
 the masculine genitive plural of *quidam*.

3 **4.** (a) Give the comparison of *acer*, *sapiens*, *parvus*.

3 (b) Write the adverbs of the above adjectives in all the degrees of comparison.

4 **5.** Give the principal parts of the verbs from which the following forms are derived:

adiunxero, volebat, viderunt, clausit.

6 **6.** Write the following verb forms:

 (a) of *audio* the perfect infinitive active;

 (b) of *possum* the 2d plural present indicative;

 (c) of *rego* the 3d singular future indicative passive;

 (d) of *volo* the 1st plural present indicative;

 (e) of *capio* the 1st singular imperfect indicative passive;

 (f) of *sto* the 3d plural perfect indicative active.

Values.

7. Translate into Latin:

- 5 (a) to remember; on the next night; to pitch camp;
 at dawn; at sunset; late in the day; to march;
 to inform; at the foot of the mountain; a little
 before.
- 4 (b) Caesar replied that he would command his sol-
 diers to withdraw (*discedo*, 3) immediately.
- 4 (c) If the tenth legion had marched faster, the town
 would not have been captured by the Gauls.
- 4 (d) Why did he ask you where we were living
 (*habito*, 1) in the city?
- 4 (e) This opportunity of establishing peace must not
 be lost (*omitto*, 3).



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FRENCH 2.

Time—Three hours.

Values.

- 4 **1.** When is *être* used as auxiliary of tense in French?
Illustrate your answer with sentences.

- 10 **2.** *Translate into French:*

- (a) She has gone to bed.
- (b) What time is it?
- (c) It is ten minutes to twelve (noon).
- (d) The first of June.
- (e) My aunt has cut her finger
- (f) We ought not to go.
- (g) Give me some.
- (h) He gave it to her.
- (i) George the Fifth.
- (j) What have you need of?

- 3.** *Translate into French:*

- 2 (a) What are you going to do in the country?
I am going to visit my uncle and cousins.
- 2 (b) There are apple trees in the garden. Apples ripen
in the month of September.
- 3 (c) Here are the paintings which my sister has
bought. They are very beautiful.
- 3 (d) Potatoes are more useful than cabbages. They
are good for men and animals.
- 3 (e) Last year I sold roses for twenty francs a dozen.
How much are they now?
- 3 (f) These candies are for your little sister; please give
them to her.

Values.

- 3 (g) We shook hands with your father and mother
They are both very well.
- 3 (h) How long has she been here? She has been here
for half an hour.
- 3 (i) Was it I that those gentlemen bowed to? Yes,
it was to you they bowed.
- 3 (j) I like to spend the evening at home; it is easy to
find amusement there.
- 3 (k) Although he is late, I shall remain in order that
I may see him.
- 3 (l) I should go to visit my aunt again this summer,
if I had not been there so often already.

12 4. *Translate into French:*

I have a young friend who lives in Quebec. I had a letter from him this morning in which he invites me to go with his father, brother and himself on a trip in a motor car to Nova Scotia (Nouvelle Ecosse, f). Pierre—that is my friend's name—says that they will visit Annapolis Royal and Grand Pré. It will be delightful to see that beautiful country of the Acadians (Acadiens).

8 5. *Translate into English:*

Gaston. Eh bien, monsieur Poirier... puisque vous aimez les tableaux touchants, je vous en ferai faire un d'après un sujet que j'ai pris moi-même sur nature. Il y avait sur une table un petit oignon coupé en quatre, un pauvre petit oignon blanc! le couteau était à côté.... Ce n'était rien et ça tirait les larmes des yeux.

Verdelet, (bas à Poirier). Il se moque de toi.

Poirier, (bas à Verdelet). Laisse-le faire.

Le Duc. De qui est ce paysage?

Gaston. D'un pauvre diable plein de talent, qui n'a pas le sou.

Poirier. Et combien avez-vous payé ça?

Gaston. Cinquante louis.

Poirier. Cinquante louis! le tableau d'un inconnu qui meurt de faim! A l'heure du dîner, vous l'auriez eu pour vingt-cinq francs.

Antoinette. Oh! mon père!

Poirier. Voilà une générosité bien placée!

Gaston. Comment, monsieur Poirier, trouveriez-vous mauvais qu'on protège les arts?

Values.

Poirier. Qu'on protège les arts, bien! mais les artistes, non....ce sont tous des fainéants et des débauchés. On raconte d'eux des choses qui donnent la chair de poule.

- 1 (a) *Cinquante louis*....vingt-cinq francs—Why does Gaston use the term *louis* and Poirier prefer *francs*.
- 1 (b) *A l'heure du dîner*: What has Poirier in mind in saying this?
- 4 (c) Write out in full the principal parts of:
ferai; pris; avait; meurt.
- (d) *Translate into French*:
 - 1 1. I paid six francs for it.
 - 1 2. You have made fun of me.
 - 1 3. Are you hungry?

8 6. *Translate into English*:

Antoinette. Ah! je viens de perdre tout ce que j'avais gagné dans le cœur de Gaston....Il m'appelait marquise, il y a une heure....mon père lui a rappelé brutalement que je suis mademoiselle Poirier.

Verdelet. Eh bien! est-ce qu'on ne peut pas aimer mademoiselle Poirier?

Antoinette. Mon dévouement aurait fini par le toucher peut-être, ma tendresse par attirer la sienne....Il était déjà sur la pente insensible qui le conduisait à moi! mon père lui fait rebrousser chemin! Mais, pourquoi lui écrit-elle?

Verdelet. Pour l'inviter à quelque soirée, tout simplement.

Antoinette. Une soirée bien pressée, puisqu'elle envoie l'invitation par un domestique. Oh! quand je pense que le secret de ma destinée est enfermé sous ce pli....allons-nous-en....cette lettre m'attire....je suis tentée. (Elle la remet sur la table et reste immobile à la regarder.)

Verdelet. Viens, tu as raison. (Elle ne bouge pas.)

- 2 (a) Write out in full the present indicative of:
conduisait; allons-nous-en.
- 3 (b) *Translate into French*:
 1. She has not gone away.
 2. You are never wrong.
 3. We have just come.

Values.

- 2 (c) *cette lettre m'attire*: Explain briefly the importance of *cette lettre*.
- 2 (d) How do Poirier and Gaston typify two social classes in conflict?

6 7. *Translate at sight into English*:

Le Sansonnet* Volé

Un vieux chasseur gardait dans sa chambre un sansonnet, qui savait parler quelques paroles. Par exemple, quand son maître appelait: Sansonnet, où es-tu? l'oiseau intelligent répondait toujours: Me voici. Le petit Charles, fils d'un de ses voisins, aimait beaucoup à voir et à entendre ce sansonnet, et rendait souvent visite à son vieil ami, pour jouer avec l'oiseau. Un jour il arriva pendant l'absence du chasseur. Il saisit vite l'oiseau, le mit dans sa poche et allait courir chez lui avec son larcin. Mais dans ce moment le chasseur rentra. Trouvant Charles dans sa chambre, pour amuser son petit voisin il appela, comme d'habitude: Sansonnet, où es-tu? Me voici, cria de toute sa force l'oiseau caché dans la poche du petit garçon. Ainsi l'oiseau découvrit lui-même le voleur.

*Starling.



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ART 1.

Time—Three hours.

- NOTES: 1. Three questions make a full paper. One of these must be question 5.
2. Use foolscap for all written work and a separate sheet of drawing paper for each of the drawing questions.

Values.

- 40 1. Make a group drawing of two books and a pleasingly shaped vase. Draw one book in parallel perspective. Draw the other book in angular perspective. Draw the three objects below the eye level. Put in the shading supposing the light to come from the left. Marks will be given for a pleasing grouping of these objects.

Work as follows: Plan your objects to fill the page nicely. Sketch lightly the various shapes and details. Do not use your ruler at all in this question. Clean up the drawing and finish with crisp lines of pencil or pen shading.

OR

Draw a plain gable house which stands at an angle to the observer, showing a chimney, projecting roof, doors and windows. Indicate a few surroundings and finish in light and shade, using pen or pencil.

- 30 2. (a) Make a landscape composition within a rectangle $4\frac{1}{2}'' \times 2\frac{3}{4}''$ showing distant hills and trees, with a house or trees in the foreground. Finish in black and white, using brush and water-color or pen and ink.
- 10 (b) Give a written explanation of what you mean by dominant and subordinate elements in a composition. Show how you applied these principles when making your landscape composition.

[OVER]

Values.

Reference to your drawing or to little explanatory sketches when answering this question will receive credit.

- 40 **3.** Make a design that will be suitable for a Drawing Portfolio.

Work as follows:

(1) Plan the general shape. (2) Lay out the masses for (a) the words "Art Portfolio," (b) Illustration, (c) Name. (3) Fill in the masses, using Roman letters for title and name. Select any illustrative material connected with art work. (4) Put a line-border around your work and finish *HALF* of your work in either ink or color.

- 40 **4.** Make a scale of values (sometimes called the neutral scale) ranging from black to white. Each sample of neutral color to be $1\frac{3}{4}'' \times \frac{1}{2}''$.

Put opposite this scale of values, in their correct places, a sample of yellow-orange, violet, blue-green and red.

OR

Give a written explanation of the colors most suitable for a living-room, a parlor and a bed-room. Give your reasons.

Draw three rectangles $6'' \times 2\frac{1}{2}''$ and color them showing the color schemes you would suggest for the wall of (1) a bed-room, (2) a living-room, (3) a parlor. Put the name under each example.

- 10 **5.** (a) Write a concise description of the four examples of portraiture which you have studied in Art appreciation this year. Give the names and nationality of the artist in each case, and compare the four portraits as to—

- (1) Purpose of the artist in each case.
- (2) Arrangement or composition.
- (3) Facts about color.

- 10 (b) The "Parthenon" and the "Pantheon" are examples of two types of architecture. Give the main features of each type. Trace the development of each type. State where the buildings are to be found and to what type each belongs. Small sketches to illustrate your points may be made.



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HISTORY 2.

Time—Three hours.

NOTE TO CANDIDATES: Candidates will answer *seven* questions only, *two* to be selected from Section A, *two* from Section B, and *three* from Section C—one of which *must* be Question 10.

SECTION A.

Values.

1. Give a careful account of the Protestant Revolt or Reformation in England under Henry VIII, using the following headings:
 - 4 (a) The causes of revolt.
 - 4 (b) The steps in the breach with Rome.
 - 5 (c) The dissolution of the monasteries
 - 3 (d) The doctrinal side of this Reformation.
2. "Queen Elizabeth . . . ruled in a period of supreme danger and supreme development, when England produced the greatest men of the time, on the sea and in the world of letters."—Mowat.
 - 16 Describe the character and achievements of the following men of the Elizabethan Age: Sir Walter Raleigh, Sir Francis Drake, William Shakespeare
3. Write careful notes on the following topics:
 - 5 (a) The Petition of Right.
 - 5 (b) Ship-Money.
 - 6 (c) The Long Parliament up to the outbreak of the Great Rebellion.

[OVER]

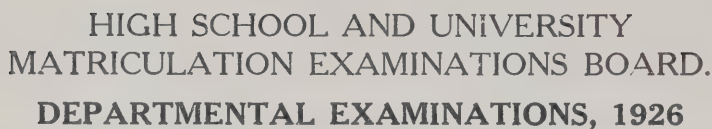
SECTION B.

Values.

- 4 **4.** Discuss the following features of Charles II's reign:
- 6 (a) Nonconformity and the Clarendon Code.
- 6 (b) The maritime struggle with the Dutch.
- 6 (c) Shaftesbury and the beginnings of political parties in England.
- 5 **5.** (a) What were the causes of the War of the Spanish Succession, and why did Britain become involved?
- 6 (b) Show the importance of the part which Britain played in the struggle.
- 5 (c) Give the terms of the Treaty of Utrecht, judging from them to what extent the war was a success.
- 6 **6.** (a) What were the causes of friction between Britain and her American Colonies which led to the revolt of the latter?
- 7 (b) What were the decisive events of the American Revolutionary War and what the causes of British failure?
- 3 (c) Estimate the results of the struggle.

SECTION C.

7. "The statesman who was to bring about the most momentous reform in England during the nineteenth century was Sir Robert Peel."—Mowat.
- 16 Give an account of the career of Peel, showing clearly the importance of his services to Britain.
- 8.** Give an account of:
- 4 (a) The Agricultural Revolution.
- 5 (b) The Industrial Revolution.
- 7 (c) The effects of these movements upon the social and political condition of England.
- 9.** "After 1890 there began a period of gradually increasing tension between Great Britain and Germany."—Mowat.
- 16 Trace the growth of this tension up to the outbreak of the Great War in 1914.
- 10.** Write a note on *one* of the following topics:
- 4 (a) The Act of Union between Great Britain and Ireland.
- 4 (b) The Dominion of New Zealand.
- 4 (c) The Parliament Act, 1911.
- 4 (d) General Gordon.



Time—Three hours.

3 **1.** (a) What is meant by the terms—metre, trochee, and
 hexameter as applied to verse?

8 (b) Quote *two* passages of *two lines each* illustrating
 different metres and indicate the scansion of
 each line.

3 **2.** (a) What cause of quarrel had King John with the
 Abbot?

2 (b) What task did the King set the Abbot in place
 of punishment?

5 (c) Tell how the Abbot succeeded.

2 **3.** (a) Explain why Lars Porsena made his attack on
 Rome.

5 (b) Compare the Roman of the time of Horatius with
 the Roman of the time when the story is sup-
 posed to be told.

3 (c) How was Horatius rewarded?

4 **4.** (a) "That he asked and that he got—nothing more."
 Describe the event which had given him the right
 to ask. Tell what he got.

4 (b) "And did they twine the laurel-wreath for those
 who fought so well"?

What fight is referred to?
What was their reward?

- (c) "But to my closet bring
The angry lords, with all expedient haste:
I conjure thee but slowly; run more fast."

Who is to run more fast?

Why does John want "the angry lords"?

5 5. Indicate the correct answer in each case:

- (a) "The Old Superb" was written by Stevenson, Newbolt, Stead, Macaulay.
- (b) "Balder" was killed by Hermod, Hela, Hoder, Thok.
- (c) "To a Skylark" was written by Burns, Poe, Ay-toun, Wordsworth.
- (d) "Odin's horse" was named Nanna, Sleipner, Thor, Ymir.
- (e) "The Shepherd Boy" was written by Lowell, Kipling, Pickthall, Hawthorne.
- (f) "Frea" was the wife of Heimdall, Lok, Odin, Balder.
- (g) "The Highway Man" was in love with Kate, Jenny, Amy, Bess.
- (h) "The home of the Gods" was named Valhalla, Asgard, Niflheim, Midgard.
- (i) "The Ode to a Nightingale" was written by Keats, Noyes, Austin, Lampman.
- (j) "The Colonel's mare" was stolen by Mud Sam, Kamal, Tom Touchy, Robin Hood.

8 6. Continue any *four* of the following quotations for at least three lines. Quote sixteen lines in all.

- (a) "He that dwelleth in the secret place of the Most High."
- (b) "The Heights by great men reached and kept."
- (c) "Is life worth living? Yes, so long."
- (d) "So Westward ho! for Trinidad and Eastward ho! for Spain."
- (e) "We be two strong men" said Kamal then, "but she loveth the younger best."
- (f) "My lord, they say five moons were seen to-night."
- (g) "Shew her through all the world the signs of grief."
- (h) "And the Gods trembled on their golden beds."
- (i) "Thou wast not born for death, immortal Bird!"
- (j) "Behold her, single in the field."

Values.

(*k*) "The mountains look on Marathon."

(*l*) "To every man upon this earth."

- 13 **7.** "Now that I have that admirable likeness of myself in front of my cave, where I can sit at my leisure, and gaze upon its noble features and magnificent proportions, I have no wish to see that abode of cowardly and selfish people."

Who is speaking? Whence and how had he got this admirable likeness? Describe several incidents to prove that his description of the townspeople as "cowardly and selfish" is justified.

OR

What part is actually played by "the door" in the story of *Le Sire de Malétroit*? How did de Malétroit succeed in carrying out his plot after getting Denis inside the door?

- 14 **8.** Two of your stories have to do with hunting for hidden treasure. Who made up each party? Tell briefly *either* story from the time of the setting out of the hunters until their return home.
- 8 **9.** Write a sketch of the "Ambitious Guest," telling how you imagine he looked and pointing out some of his leading characteristics.

OR

Name the members of the Spectators' Club, and describe "the first of our Society" in detail.

- 8 **10.** Write about Miles Standish under the following headings:
- (*a*) His dealings with the Indians.
 - (*b*) His appearance at the wedding.
- 12 **11.** (*a*) Describe, in a paragraph *each*, *two* of the following incidents:
- (1) Ulysses meets Quicksilver.
 - (2) Proserpina and the Pomegranate.
 - (3) Jason and the old woman with the peacock.
 - (4) Hercules and Antaeus.
- (*b*) Tell who *two* of the following characters are and in what story they appear. Give in four or five sentences the part they play in the story. Captain Moray, Shorty, Edwige Légaré, Oo-koo-hoo, Inspector Charles Constantine.



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HISTORY 1.

Time—Three hours.

Values.

1. "As the Phoenicians were men of the sea, so the Hebrews were men of the desert."—West.
- 4 (a) Draw a sketch-map showing the geographical position in the ancient world occupied by the Hebrew and Phoenician peoples.
- 12 (b) Sketch the story of these two peoples, noting particularly any ways in which geography affected their development.

OR

Describe the following features of the early civilization of the Tigris-Euphrates valley:

- 3 (a) The laws of Hammurabi.
- 4 (b) Writing and books.
- 4 (c) Science, architecture and sculpture.
- 5 (d) Arts and Industry.
2. Give an account of:
- 6 (a) The government and classes of people of the Spartan state.
- 6 (b) The training of the Spartan citizen.
- 5 (c) The part played by Sparta in the Persian Wars.

OR

- 4 (a) Compare the strength of Athens and Sparta on the eve of the Peloponnesian War.
- 8 (b) Give an account of the ensuing struggle.
- 5 (c) What were its effects on Greece?

[OVER]

Values.

3. "The first century and a half of the Republic was a stern conflict between patricians and plebeians."
—West.

- 3 (a) Make clear the distinction between these two classes.
14 (b) Give an account of their conflict, making clear its results.

4. Describe united Italy under Roman rule after 266 B.C under the following headings:

- 4 (a) The classes of "citizens."
3 (b) The classes of "subjects."
3 (c) The Roman roads.
3 (d) The Roman army.
4 (e) The government.

OR

"About 400 A.D. the Empire began to crumble before barbarian attacks less formidable than many which had been rebuffed in early centuries. Secret forces had been sapping the strength and health of the Roman world."—West.

- 17 Show how the Roman Empire at this time was becoming fatally weakened.

5. Give an account of Feudalism under the following headings:

- 5 (a) The causes of its development.
4 (b) The relations between lords and vassals.
8 (c) The feudal manor and the life of its people.

OR

Describe the main features and achievements of the Renaissance under the headings:

- 5 (a) The Renaissance in Italy.
4 (b) The Renaissance in the North.
4 (c) New inventions.
4 (d) Geographical discoveries.

6. Write careful notes on *two* of the following topics:

- 8 (a) The great achievements of the Alexandrian Age.
8 (b) Christianity in the first four centuries of the Roman Empire.
8 (c) The growth of Mohammedanism up to the battle of Tours.
8 (d) The beginnings of Parliament in England under Edward I.



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COMPOSITION 1.

N.B.—Candidates taking the Agricultural or the Technical Course shall omit Question 2 and answer Question 7.

Time—Three hours.

Values.

- 12 **1.** Without changing the wording in any way, punctuate, capitalize and paragraph the extract that follows:

When about ten minutes from Spartaca Rufus appeared to be ill at ease im afraid the climate down there may ruin my constitution he murmured ive half a mind to let the experiment slide and go right back north well lets go back then it isn't too late yet no he returned savagely im no coward ill see the thing through but Harriet he went on more softly if I should happen to be among the two per cent youll find all my affairs up north arranged nonsense Rufus dont look on the dark side Spartaca called the brakeman.

- 9 **2.** Pick out the subordinate clauses in the following sentences and give their kind and relation:

(a) He would have comprehended without much difficulty, had he been a great and wise philosopher, that play consists of whatever a body is not obliged to do.

(b) When the delightful days were just beginning to pall upon us, a real adventure befell us, which, although it did not cause us any permanent inconvenience, we should have taken pains not to encounter.

- 4 **3.** (a) Give the plural forms of the following: court-martial, larva, ally, elf, 8, terminus, Mr. Brown, omnibus.

(b) Remove the grammatical errors which you find in the following sentences and give the reasons for any corrections you may make:

- (1) The teacher's convention, this year, was poorly attended on account of the unusually severe weather.
- (2) When she said that to sister and I, we couldn't help laughing.
- (3) The man whom I thought was my friend has evidently deceived me.
- (4) The captain, as well as the mate and the pilot, were badly frightened by the sudden turn of events.
- (5) I told my mother frankly that it would be more of a surprise to father than she.
- (6) He laid down on the sofa to rest and there he lay fast asleep for at least two hours.

6 4. (a) Give three devices for securing coherence in the paragraph.

8 (b) Rearrange the following paragraph in such a way as to make it coherent:

Before Wolfert left his home he counselled his wife and daughter to go to bed, and feel no alarm if he should not return during the night. They saw at once by his manner that something unusual was in agitation; all their fears about the unsettled state of his mind were aroused with tenfold force; they hung about him entreating him not to expose himself to the night air, but all in vain. Like reasonable women, on being told not to feel alarm they fell immediately into a panic. At length the appointed night arrived for this perilous undertaking. It was a clear starlight night, when he issued out of the portal of the Webber palace. He wore a large flapped hat tied under the chin with a handkerchief of his daughter's, to secure him from the night damp, while Dame Webber threw her long red cloak about his shoulders, and fastened it round his neck.

16 5. (In answering this question candidates must be careful to use fictitious names and addresses.)

You have been in a railroad wreck and have already telegraphed to your home to allay possible anxiety. Now write to your mother a letter of about one page in length, giving in an interesting manner particulars of the accident.

You have recently passed the Grade VIII examination and have been for a week in a distant town, or city, where you have gone to attend high school. Write to your father a letter of about a page in length, giving him a clear but interesting account of the experiences you have had in your new surroundings.

- 36 **6.** Write an essay of about two pages in length, choosing for your subject *one* of the following themes. Make your composition as effective as possible by avoiding mechanical errors and by expressing your ideas clearly but naturally.
- (a) Dr. Knipperhausen and Wolfert try their luck together.
 - (b) Our side wins an old-fashioned Spelling Match.
 - (c) Caught Trespassing.
 - (d) How Horatius Kept the Bridge.
 - (e) I Make a Poor Second in a Road Race.
 - (f) A Fishing Trip that Ended in Disaster.
 - (g) A Motor Accident.
 - (h) An Exciting Basketball Match.

N.B.—To be answered by only those taking the Agricultural or the Technical Course.

- 9 **7.** Suppose you are sent out to choose a site for a summer camp for forty persons for two weeks. Write a report of approximately a page in length recommending a certain site. Your report should deal with such matters as the general position of the site, the condition of the roads leading to it, facilities for obtaining supplies, opportunities for bathing, and so on. Make the report complete and detailed. Point out defects as well as advantages in the site.



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GEOMETRY 1.

Time—Three hours.

Values.

- 2 **1.** (a) The complement of the angle m is 40° . What is the magnitude of the angle m ?
- 4 (b) Prove that the lines bisecting a pair of adjacent supplementary angles form a right angle.
- 4 (c) Having given the lengths of the four sides and of one diagonal, construct the quadrilateral.
- 2 **2.** (a) Define the term "isosceles triangle".
- 10 (b) The angles at the base of an isosceles triangle are equal to one another. I — 2.
- 4 (c) Prove that the opposite angles of a rhombus are equal to one another.
- 10 **3.** (a) To draw a perpendicular to a given straight line of unlimited length from a given point not in the line. I — 12.
- 6 (b) To construct an isosceles triangle having given the angle at the vertex and the altitude.
- 8 **4.** The perpendicular is the shortest line that can be drawn from a given point to a given straight line; and a line nearer to the perpendicular is less than one more remote. I — 13 Cor.

OR

To describe a parallelogram equal to a given triangle, and having an angle equal to a given angle.
II — 11.

[OVER]

Values.

- 10 **5.** (a) If a straight line falling on two other straight lines make (1) the alternate angles equal to one another; or (2) the two interior angles on the same side together equal to two right angles, then the two straight lines are parallel. II — 3.
- 5 (b) Let AB be a given straight line, C a given angle, and D a given point not in AB . Draw from D a straight line to make with the line AB an angle equal to angle C .
- 10 **6.** (a) Triangles, equal in area, on the same base, or on equal bases that are in the same straight line, and on the same side of the base line, are between the same parallels. (II — 8.)
- 2 (b) State the converse.
- 6 **7.** (a) $ABCD$ is a quadrilateral having BC parallel to AD , and E is the middle point of DC . Show that the triangle AEB is half the quadrilateral.
- 6 (b) Show that any straight line through the intersection of the diagonals of a parallelogram divides the parallelogram into two equal parts.
- 7 **8.** Two triangles of equal area lie on the opposite sides of the same base. Prove that the straight line joining their vertices is bisected by the base.
- 4 **9.** Find the magnitude of each interior angle of a regular eight-sided figure.



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GENERAL SCIENCE.

Time—Three hours.

Values.

- 4 **1.** (a) Define the legal standard of length for Great Britain.
- 2 (b) What connection is there between the unit of length and the unit of weight in the metric system of measurement?
- 2 (c) By means of a diagram show how you would proceed to find the area of an irregularly bounded plane surface.

Either

- 6 **2.** { (a) State *three* physical characteristics of air. Explain how each is applied in some useful way.
- 8 { (b) Name *four* important substances composing the atmosphere. Explain how each contributes to the welfare of man.

Or

- 6 **3.** { (a) How might you construct a barometer? Give *two* uses of the instrument.
- 6 { (b) What are the causes of winds? Apply the causes you state to account for the trade winds.
- 2 { (c) Of what significance are cyclones in Canada?
- 2 **4.** (a) Explain how clothes dry when hung out of doors when the temperature is below zero.
- 2 (b) Account for the formation of hail in the summer-time.
- 2 (c) Write an explanation of a fog in winter.
- 1 (d) Why do wet clothes dry more quickly in a breeze?
- 4 **5.** (a) Describe an experiment to show that water is composed of two substances.

[OVER]

Values.

- 4 (b) Show four ways in which water serves the growing plant.
- 6 (c) Explain *three* methods by which contaminated water is made fit for drinking.
- 4 6. (a) Name *four* typical adaptations made by plants in order that they may live successfully under special climatic conditions. Give an example of each.
- 4 (b) What is the great importance of light in the growth of plants?
- 4 (c) Name *two* distinguishing characteristics each of plants growing in (a) a shady location (b) in water.
- 3 7. (a) Name *three* ways in which herbivorous mammals differ from carnivorous.
- 12 (b) What peculiar modifications in the structure of each of the following animals fit them, (1) for getting their food, (2) for locomotion, and (3) for protection against their enemies? Grasshopper, snake, swallow, jackfish.
- 3 8. (a) Name *three* typical and distinct methods for generating energy to do man's work.
- 3 (b) Trace the energy in each case in (a) to the sun
- 4 (c) Explain an advantage of (1) the lever, (2) the pulley, as they are used to assist man in his work. Draw diagrams to illustrate your answer.
- 4 9. (a) Explain the formation of salt beds found in the earth.
- 2 (b) Account for the location of sea shells in rock near the summit of a mountain peak.
- 4 (c) How has the earth's crust over the igneous rocks been formed?

Either

- 6 10. { (a) Explain the *two* important effects upon the earth, that the two great motions of the earth produce.
- 4 { (b) Explain the phases of the moon, using a diagram.

Or

- 4 11. { (a) Using a diagram, explain—
- 4 { (1) An eclipse of the sun.
- 4 { (2) An eclipse of the moon.
- 2 { (b) Why is the heating effect of the sun less in winter than in summer?



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DEPARTMENTAL EXAMINATIONS, 1926

ALGEBRA 1.

Time—Three hours.

Values.

- 4 **1.** If one man has x dollars and another man has half as much, express in terms of x what they both have. If this amount is \$75.00, write and solve an equation that will find what each has.

OR

- 4 Express the interest on x dollars at 6% for 3 years. If the interest is \$36.00, write and solve an equation that will find the value of x .

- 2.** If $a = -1$, $b = 3$, $c = -2$ find the value of

3 (a) $-3a^4b c^3$.

3 (b) $-3a^4 + b - c^3$.

- 4 (c) Remove the brackets and express in descending powers of x :

$$2x(3x-2) - 5(x-3) + 6x(x-1) - 2(x^2-5x)$$

- 7 **3.** Add the sum of $2y - 3y^2$ and $1 - 5y^3$ to the remainder left when $1 - 2y^2 + y$ is subtracted from $5y^3$.

- 7 **4.** Simplify:
$$\frac{(a+2)(a+3) - (a-3)(a-2)}{10a}$$

- 7 **5.** The expression $44x^4 - 83x^3 - 74x^2 + 89x + 56$ is the product of two expressions of which $4x^2 - 5x - 7$ is one. Find the other.

[OVER]

Values.

Either

- 7 **6.** Solve the equation:

$$\frac{2x}{3} + \frac{x+1}{4} - \frac{x-1}{2} = x - 8.$$

- 2 Verify the solution.

Or

- 7 **7.** Solve the equation: $x(3x - 1) = 10$.

- 2 Verify.

- 5 **8.** Factor: $3x^2 - 19x - 14$.

- 5 **9.** Factor: $1 - (m^2 + n^2) - 2mn$.

- 5 **10.** Factor: $6x^2 - 2ax + 3xy - ay$.

- 5 **11.** Factor: $24a^4 - 3ab^3$.

- 5 **12.** Factor: $4a^4 + 1$.

- 9 **13.** Solve for x and y in the equations:

$$3x + 2 - \frac{y+7}{11} = 10.$$

$$2y + \frac{x+11}{7} = 10.$$

- 2 Verify your solution.

- 14.** Attempt two questions only:
- 10 (a) A workman can save \$200.00 a year. He goes to another town where his wages are 10% greater and his expenses are 5% less, and he can save \$310.00 a year. What are his wages now?
- 10 (b) A man has two farms rented at \$5 per acre and the total rent is \$1,100.00. When the rent of the first is reduced 20% and the second is increased 20%, the total rent is \$1,120.00. How many acres are there in each?
- 10 (c) If I walk m miles at 4 miles per hour and $m + 2$ miles at 3 miles per hour, the journey will take 15 minutes longer than if I walked at the uniform rate of $3\frac{1}{2}$ miles per hour. Find the length of the journey.



HIGH SCHOOL AND UNIVERSITY
MATRICULATION EXAMINATIONS BOARD.
DEPARTMENTAL EXAMINATIONS, 1926

LATIN 1.

Time—Three hours.

Values.

1. Decline in full throughout singular and plural:
 - 4 (a) *exercitus fortier*;
 - 4 (b) *filia prudens*;
 - 4 (c) *mare latum*.
- 4 2. Give the *ablative singular*, the *genitive plural*, and the *gender* of the following nouns:
urbs, princeps, res, nomen.
- 4 3. (a) Give the comparisons of the following adjectives:
audax, miser, parvus, gravis.
 - 4 (b) Form the adverbs for each of the above and give their comparisons.
- 3 4. (a) Name (with English meanings) the nine adjectives which take *-ius* in the genitive singular and *-i* in the dative.
 - 3 (b) Give the declension of *hic* for all genders in the singular.
 - 3 (c) Give the declension of *idem* for all genders in the plural.
- 8 5. Write the principal parts of the following verbs:
ago, differo, dedo, quaero, proficiscor, maneo, recipio, venio.
- 8 6. Write the following verb forms:
 - (a) of *oppugno* the 2d sing. future indicative passive;
 - (b) of *iubeo* the 3d plur. present subjunctive active;
 - (c) of *scribo* the 1st plur. perfect indicative active;

[OVER]

Values.

- (d) of *munio* the 3d sing. imperfect subjunctive passive;
- (e) of *capio* the 1st sing. imperfect indicative active;
- (f) of *sum* the perfect infinitive;
- (g) of *vereor* the 3d plur. pluperfect indicative;
- (h) of *fero* the 2d sing. present indicative passive.

- 6 **7.** Explain the derivation from the Latin of each of the following words, and write an English sentence for each to exhibit its proper meaning:

vulnerable, copious, temporary, egotism, depopulate, identify.

8. Translate into English:

- 1 (a) *Aquila non capit muscas.*
- 1 (b) *Quorum pars magna fui.*
- 1 (c) *Salus populi suprema lex esto.*
- 1 (d) *Fas est et ab hoste doceri.*
- 3 (e) *Caesar, duabus legionibus in citeriore Gallia conscriptis, Germanos facillime vinci posse existimavit.*
- 3 (f) *Telis tam bene Romani usi sunt ut pauci hostium mortem effugerent.*
- 3 (g) *Scies quis sim ex eo nuntio quem ad te misi.*
- 3 (h) *Hac oratione adducti, inter se fidem et ius iurandum dant ut bellum Romanis prima aestate inferant.*
- 5 (i) *In media caede mulieres Sabinae quae raptae erant, processerunt et patres et coniuges multis lacrimis orabant ut finem proeli facerent. Utrique, his precibus commoti, pugnare destiterunt et paulo post pacem fecerunt. Urbs communis Romanorum et Sabinorum facta est.*

9. Translate into Latin:

- 6 (a) The general said that he was going to place cavalry on both (*uterque*) wings of his battle-line.
- 6 (b) We shall send Brutus ahead to choose (*deligo*, 3) a place for a camp.
- 6 (c) The enemy arrived so quickly that Caesar was not able to draw up (*instruo*, 3) his battle-line.
- 6 (d) A little while before he had asked me where my brother was living (*habito*, 1) in the city.



DEPARTMENTAL EXAMINATIONS, 1926.

GRADE VIII.

ENGLISH LITERATURE AND SPELLING.

Time—Two and one-half hours for Papers I and II

PAPER I—SPELLING.

Value

25

- | | |
|-----------------|------------------|
| 1. affect | 26. foreign |
| 2. worship | 27. encourage |
| 3. physician | 28. whether |
| 4. privilege | 29. interference |
| 5. parliament | 30. governor |
| 6. volume | 31. eighth |
| 7. fatigue | 32. imagine |
| 8. necessity | 33. ghost |
| 9. suggest | 34. tobacco |
| 10. presence | 35. writing |
| 11. marriage | 36. separate |
| 12. condemn | 37. minute |
| 13. relieve | 38. February |
| 14. choose | 39. Wednesday |
| 15. recommend | 40. shoes |
| 16. system | 41. grammar |
| 17. religion | 42. women |
| 18. thorough | 43. loose |
| 19. scheme | 44. business |
| 20. receipt | 45. traveller |
| 21. independent | 46. doubtful |
| 22. similar | 47. justice |
| 23. affair | 48. medicine |
| 24. precious | 49. patient |
| 25. especial | 50. deceive |



DEPARTMENTAL EXAMINATIONS, 1926.

GRADE VIII.

ENGLISH LITERATURE AND SPELLING.

Time—Two and one-half hours for Papers I and II.

PAPER II—ENGLISH LITERATURE.

Values.

- 3 1. (a) Explain clearly why the Ancient Mariner told his story. Why did he select the wedding guest to hear it? (This may be answered by a brief quotation.)

- 6 (b) "That selfsame moment I could pray;
And from my neck so free
The albatross fell off, and sank
Like lead into the sea."

Outline the events which led from the killing of the albatross to the event quoted.

- 2 (c) What lesson is taught in the "Rime of the Ancient Mariner"?

- 4 2. (a) Write notes on the following persons, such as will bring out their leading characteristics:

Dame Van Winkle, Nicholas Vedder.

- 6 (b) Tell the story of Rip Van Winkle from the time of his awakening from his long sleep.

- 8 3. "In the afternoon they came unto a land
In which it seemed always afternoon."

Who are they? What land was this?

What were their experiences here?

Quote the closing words of the poem. How were they induced to change this decision?

Values.

- 8 4. Describe *two* incidents of the day which the Spectator spends with Sir Roger.

OR

- 8 Describe the adventures of Alexander Selkirk on the desert island.

- 10 5. Name the persons who attended the town meeting at Killingworth. What does the poet tell us about each?

OR

- 10 "O Katie, what I suffered for your sake!"
Who is the speaker? Tell what had led up to this suffering. What form did the suffering take?

- 9 6. What was the Gentle and Joyous Passage of Arms at Ashby? Describe the most exciting encounter. Why did Rowena utter a shriek as she was about to crown the victor?

OR

- 9 "I would rather be a poor man in a garret with plenty of books than a King who did not love reading."
Whose words are these? What pleasures could he get from books, which could be compared to the joy of being King?

7. Complete the following quotations:

- 3 (a) "He made them of every grain and girth—(six lines).
2 (b) "I vow to Thee, my country—(six lines).
2 (c) "O God, our help in ages past—(eight lines).
2 (d) Eight consecutive lines from either "The Ancient Mariner" or "The Brook."
- 10 8. Name the selections from which *any five* of the following quotations are taken, and show the connection of each with the rest of the selection.
- (a) "And the parson was sitting upon a rock
At half-past nine by the meet'n'-house clock."
(b) "This is my work: my blessing, not my doom."
(c) "It's duty, duty, first and last, the Crimson Manual saith."

Values.

- (d) "And my soul is in Canada's evening shine,
Wherever my body may be."
- (e) "It was just a simple, unpretentious house, set
about with big trees, encircled in meadow and
field rich with the promise of harvest."
- (f) "Oh, no! it doesn't match it
You didn't want that matched. You were
mistaken.
What you wanted was Turkey red—third coun-
ter to the left."
- (g) "Sir, if you knew her in her English days,
My mother, as it seems you did, the days
That most she loves to talk of, come with me."



DEPARTMENTAL EXAMINATIONS, 1926.

GRADE VIII.

GRAMMAR AND COMPOSITION.

Time—Three hours.

GRAMMAR.

Values.

1. For though Rip marvelled greatly what could be the object of carrying a keg of liquor up this wild mountain, yet there was something strange and incomprehensible about the unknown, that inspired awe and checked familiarity.

I should not have known this story, had not the inn-keeper, upon Sir Roger's alighting, told him in my hearing, that his honor's head was brought back last night with the alterations that he had ordered to be made in it.
- 2 (a) Distinguish between a clause and a prepositional phrase.
- 12 (b) What are the *three* kinds of subordinate clauses? From the above sentences select *one* example of *each* kind and state its relation in the sentence.
- 5 (c) What are the *two* kinds of prepositional phrases? From the above sentences select an example of each kind and give the relation of each in the sentence.
- 9 2. Use the following in sentences:
 - (a) "Brave" (1) as an adjective, (2) as a verb, (3) as a noun.
 - (b) "Axis" and "sister-in-law" in the plural number.
 - (c) "Forsake" and "grind" in the past tense.
 - (d) "Courteously" and "near" in the superlative degree.

Values.

3. (a) Analyze the following sentences:
- 3 (1) Three mornings more, *lonely* and sad, she took her stand in the *same* place.
- 3 (2) On the contrary, the Spanish *were always supplied* with soldiers brought from every squadron.
- 3 (3) *For* our men, *whether* in battle-cruisers or battleships, the moment of Sir John *Jelliecoe's arrival* was *one* of intense excitement.
- 9 (b) Parse the words in italics.
- 2 4. (a) Distinguish between transitive and intransitive verbs and give an example of *each* in a *separate* sentence.
- 2 (b) Name the auxiliaries of the future tense. Use *each* correctly in a *separate* sentence.

COMPOSITION.

NOTE: Any extra time should be spent in re-reading and, if necessary, re-writing your Composition paper.

Candidates are directed to use a name other than their own in answering Questions 5 and 6.

- 8 5. Write a letter of thanks to a friend who has given you a book as a birthday gift.
- 8 6. Write an application for one of the positions advertised below:
- Wanted: Office boy, smart youth just leaving school, good writer and arithmetician. Apply Box 24, Calgary Albertan.
- Wanted: Bright girl to learn millinery. Apply Box 12, Edmonton Journal.
- 8 7. Write a paragraph of five or six sentences, using the following as the first sentence:
- Suddenly, as we turned the corner, a heavy truck struck our car.
- 6 8. Give the meaning of the prefixes and suffixes as used in the following words: divisor, postpone, detract, supersede, contradict, abundant.

Values.

20 **9.** Write a composition of at least *forty lines* on *one* of the following topics:

- (a) Shylock, the Jew.
- (b) The Battle of Trafalgar.
- (c) Bassanio's Trial.
- (d) Dr. Grenfell's Rescue from the Ice-Pan.
- (e) Simonides.
- (f) The Accident to Gratus.



DEPARTMENTAL EXAMINATIONS, 1926.

GRADE VIII.

ARITHMETIC AND MENSURATION.

Time—Two hours.

Values.

1. In 1925 a farmer obtained from 5 acres an average yield of 6.9 tons of potatoes. This was 15% greater than the average yield of 1924. He lost 10% of his 1925 crop in storage. He held out 50 bus. for seed and sold the remainder for \$1.25 per bushel.
 - 4 (a) What was the average yield in bushels per acre in 1925?
 - 4 (b) What was the average yield per acre for 1924?
 - 3 (c) How many bushels were lost by bad storage?
 - 4 (d) How much did he receive for the quantity he sold?
- 7 2. (a) What is the actual cost of a typewriter listed at \$77.50 on which successive discounts of 10% and 10% are given?
 - 7 (b) A furniture dealer paid \$300 for a set of furniture. What price must he place on the set so that he may clear \$60 after giving a discount of 20% to a customer?
- 8 3. A circular water-tank is 74 inches deep and 56 inches wide. If it is filled with water to a point exactly 2 in. below the top, how many gallons will it contain? (Allow $6\frac{1}{4}$ gal. to the cu. ft.)
- 7 4. What will it cost to refloor a bridge 450 yards long and 14 feet wide with $2\frac{1}{2}$ in. plank costing \$44.00 per thousand?

[OVER]

Values.

- 5.** On June 1st, 1925, James Black of Olds purchased from Henry Robertson, car-dealer, a new car for \$690. He gave, as part payment, his old car which the dealer valued at 45% of its original cost \$720. He paid $\frac{1}{2}$ the balance by cheque on the Bank of Montreal and for the other half he gave his note for ninety days bearing interest at 8% per annum.

- 2 (a) How much did he receive for his old car?
2 (b) Write the cheque.
2 (c) Write the note.
8 (d) What amount will pay the note when it is due?

- 6.** A man bought a house for which he paid \$5600. His expenses during the year were as follows:

- 4 (a) Taxes at 40 mills on $\frac{3}{4}$ of the purchase price of the property.
4 (b) Insurance for \$4800 at $\frac{3}{8}\%$.
 (c) Repairs and improvements \$150.
8 What rate of interest does the owner make on his investment if he rents the house for \$52.50 per month?

- 6 **7.** A square sheep pasture contains 8836 sq. rods. Find the cost of wire for fencing it at 16 cents a yard.



DEPARTMENTAL EXAMINATIONS, 1926.

GRADE VIII.

RAPID CALCULATION.

NOTE: Answers only are to be put on this paper, which is to be handed in with the Arithmetic paper. Calculation may be done on another sheet.

Time—Thirty minutes.

Values.

2	1. Add:	707.087
		69.8007
		348.078
		6974.65
		159.835
		93.3664
		648.083

1	2. From	90673146
	take	45679286

2 3. Multiply 58043 by 9084

1 4. Divide 300370 by 98

2 5. Add: $7\frac{2}{3}$, $24\frac{4}{9}$, $3\frac{8}{15}$

2 6. Subtract $69\frac{1}{2}\frac{9}{1}$ from $77\frac{5}{6}$

[OVER]

Values.

2 **7.** $.16878 \div 19.4 =$

1 **8.** Multiply the difference between 112.019109 and
112.091091 by 100

1	9.	Yds.	Ft.	In.
	From	948	2	7
	take	699	2	11

1 **10.** The number of cu. yds. of earth taken from a cellar
36 ft. x 29 ft. x 9 ft. was

1 **11.** 875 young trees at \$4.50 per 100 will cost

2 **12.** What is the value of 6930 lbs. wheat at \$1.24 a
bushel?

1 **13.** Out of 360 pupils $16\frac{2}{3}$ per cent. are absent. How
many are present?

1 **14.** A house is insured for \$6300 at $\frac{3}{8}\%$. What is the
premium?



DEPARTMENTAL EXAMINATIONS, 1926.

GRADE VIII.

HISTORY AND CIVICS AND GEOGRAPHY.

Time—Two and one-half hours.

HISTORY AND CIVICS.

Values.

- 12 **1.** Show briefly how any *four* of the following contributed to the advance of the liberty of the people in England: The Magna Charta, The Wars of the Roses, The Great Rebellion of the time of Cromwell, The Revolution of 1688, The Reform Bill of 1832.
- 12 **2.** With what events in history were the following persons connected? What part did each play in these events? Select any *six*.
Wellington, Washington, Gordon, Gladstone, Daniel O'Connell, Clive, Captain Cook, Florence Nightingale, Sir Francis Drake, Sir John A. Macdonald, Sir Wilfred Laurier.
- 6 **3.** (a) Give an account of the disputes settled by *two* of the following treaties and state the main conditions of these two treaties: Ashburton Treaty, Oregon Treaty, Alaskan Boundary Treaty.
- 5 (b) Why was the Act of Union passed and what were its conditions?
- 6 **4.** (a) In connection with a general election in Canada
(1) State *two* causes either of which may have led to the dissolution of Parliament.
(2) State the qualifications of voters.
(3) State the duties of a Deputy Returning Officer.
- 3 (b) Explain clearly the terms: Premier, Cabinet, Opposition.

Values.

- 6 **5.** Give an account of the population of Western Canada, noting approximately the time when the various waves of settlers came, and from what sources they came.

OR

- 6 Give an account of the Hudson's Bay Company in connection with the development of Western Canada.

GEOGRAPHY.

- 10 **6.** Locate and state *one* reason for the importance of *each* of the following: Singapore, Suez, Johannesburg, Jamaica, Colombo, Malta, Birmingham, Manchester, Cardiff, Glasgow.
- 4 **7.** The latitude of London and Calgary is approximately 51° North. Describe the climate of England and of Alberta, accounting for the differences.
- 6 **8.** Write a note on the surface features and industries of British Columbia *or* Alberta.
- 6 **9.** Name *two* countries from which *each* of the following materials is obtained in large quantities: rubber, cotton, sugar, silk, hides, diamonds.
- 5 **10.** Draw a map of the St. Lawrence River System, naming six lakes, four rivers, three canals, and locating the following cities: Chicago, Hamilton, Ottawa, Buffalo, Montreal, Quebec, Fort William.
- 10
- 9 **11.** On the outline map provided locate and name the following:
- (a) Four coastal waters.
 - (b) One mountain range.
 - (c) One river system.
 - (d) Areas of greatest rainfall, the arid region, the tropical area.
 - (e) Great Barrier Reef, Tasmania, the capital of Australia and three other cities.





DEPARTMENTAL EXAMINATIONS, 1926.

GRADE VIII.

AGRICULTURE, PHYSIOLOGY AND HYGIENE AND ART.

Time—Two and one-half hours.

AGRICULTURE.

NOTE: Tests are provided on both Section 1 and Section 2. Candidates shall write on *one* Section only. *Either* Section will be accepted.

SECTION 1.

Values.

- | | | | |
|---|----|-----|---|
| 4 | 1. | (a) | Name <i>four</i> great wheat-producing countries other than Canada. |
| 3 | | (b) | Give the names of <i>three</i> varieties of wheat which have been extensively grown in Canada. |
| 2 | | (c) | State <i>two</i> uses of the winter rye which is grown in Alberta. |
| 1 | 2. | (a) | To what family of plants does alfalfa belong? |
| 4 | | (b) | Name <i>two</i> members of this family suitable for table use and <i>two</i> plants belonging to the family which are <i>not</i> grown in Canada. |
| 3 | 3. | (a) | What are <i>three</i> important uses of leaves to a plant? |
| 3 | | (b) | How would you show that leaves are useful in <i>one</i> of the ways you mentioned in (a)? |
| 4 | | (c) | Name <i>two</i> kinds of plant roots and give examples of plants which have the kinds of roots you name. |
| 3 | | (d) | Describe how you would make a hot bed. |
| | 4. | (a) | Write a note on the cutworm under the following headings: |
| 2 | | (1) | Life cycle or history. |
| 2 | | (2) | The damage it does. |
| 2 | | (3) | Method of control. |
| 4 | | (b) | Into what <i>two</i> types or classes may hogs be divided? Name <i>one</i> breed of each type which is raised in Alberta. |

[OVER]

Values.

3

- (c) Name *three* important features to be considered by a farmer in choosing a farm.

40

SECTION 2.

- 4 **1.** (a) Name *two* common diseases of the potato plant and state how they may be prevented.
- 2 (b) State *two* principles to be observed in the selection of potatoes for seed.
- 3 (c) Name the *two* common methods of selecting potatoes for seed. What advantage has one method over the other?
- 2 **2.** (a) What is meant by rotation of crops?
- 3 (b) Give *three* important reasons why a farmer should employ crop rotation.
- 3 (c) Name *one* annual, *one* biennial, and *one* perennial weed.
- 3 (d) Tell how you would recognize ripe *seeds* of any *three* weeds which you have studied.
- 4 (e) Give *four* reasons why weeds should be destroyed.
- 3 **3.** (a) Name *one* distinguishing characteristic of—
 (1) humus, (2) sand, (3) clay.
- 3 (b) Describe an experiment to show the comparative water-holding capacities of sand, clay and humus.
- 3 (c) Describe how you would produce new plants from *either* a strawberry plant *or* a raspberry bush.
- 2 **4.** (a) Name *one* breed of cattle well suited for beef production, and *another* breed valuable for milk production.
- 2 (b) State *two* reasons why it is of great importance that milk should be clean.
- 3 (c) What precautions should be taken by the dairy farmer to ensure the cleanliness of the milk produced on his farm?

40

PHYSIOLOGY AND HYGIENE.

NOTE: Answer *either* part (a) *or* part (b) of Question 3, but *not both* parts.

Values.

2

- 1.** (a) How would you render first aid to a person who had cut an artery in his arm?

Values.

- 2 (b) What treatment would you give in the case of a person who has his hands so severely frost-bitten that blisters form?
- 3 (c) Name *three* important uses of food to the human body.
- 2 2. (a) What is the chief injurious effect of use of tobacco upon (1) the heart (2) the digestive organs of young people?
- 2 (b) How does the skin regulate the temperature of the body?
- 2 (c) Of what *two* types of matter are bones composed?
- 1 (d) What are adenoids?
- 6 3. (a) Name the *three* principal divisions of the brain and state the chief use of each.

OR

- 6 (b) What is the use or work of (1) arteries (2) veins (3) red corpuscles (4) white corpuscles (5) tendons (6) bile?

—
20
—

ART.

- NOTE: 1. Answer any *two* questions.
2. Use foolscap in answering Question 5.

- 20 1. Make a shaded pencil drawing of a plain chair placed in angular perspective. Show the seat of the chair below the eye level, and imagine the light is coming from the left of the observer.

NOTE: *Do not use your ruler in this question.*

- 20 2. Make a shaded pencil drawing of a tree, showing trunk, limbs and foliage. Your drawing should be well placed on the paper and not too small. State what kind of tree you have represented and give some of its chief characteristics from the standpoint of Art.
- 20 3. Make a simple poster as big as the paper will allow, containing the words "Hockey—to-night at 8 p.m." Letter the word "Hockey" in modified line capital letters one inch high. Use small letters for the other words, making them a half-inch high. Work as follows: (1) Plan the masses to give balance. (2) Fill in these masses with letters sketched lightly so that good form and spacing may be obtained. (3) Ink in, using brush or lettering pen and ink. (4) Place a border around your work.

OR

Values.

Make a design that will do for the end of a wooden book rack, using any unit of design you prefer. Work as follows: (1) Draw a rectangle $4\frac{1}{2}$ in. x $5\frac{1}{2}$ in. You may modify this rectangular shape if you wish, but keep to these measurements for outside height and width of your design. (2) Color part of your design to show the color scheme you prefer.

- 10 4. (a) Make three squares $1\frac{1}{2}$ in. in size. Color the first square with an even wash of *yellow orange* color. Color the second square with a *blue violet* color. Color the third square with a *blue green*.
- 10 (b) Under the first square (yellow orange) paint two squares of color the same size, that are analogous colors to it. Give their names. Under the second square (blue violet) paint another square of its complementary color. Name the color. Under the third square (blue green) place squares that are the *split* complementary colors to it. Name these colors. First plan out your squares, then color them as asked for above.
- 20 5. Write a complete description of the given picture, telling what important features the artist wished to impress upon us. Show how the artist has given us all the main characteristics of a pure knight in this picture.



